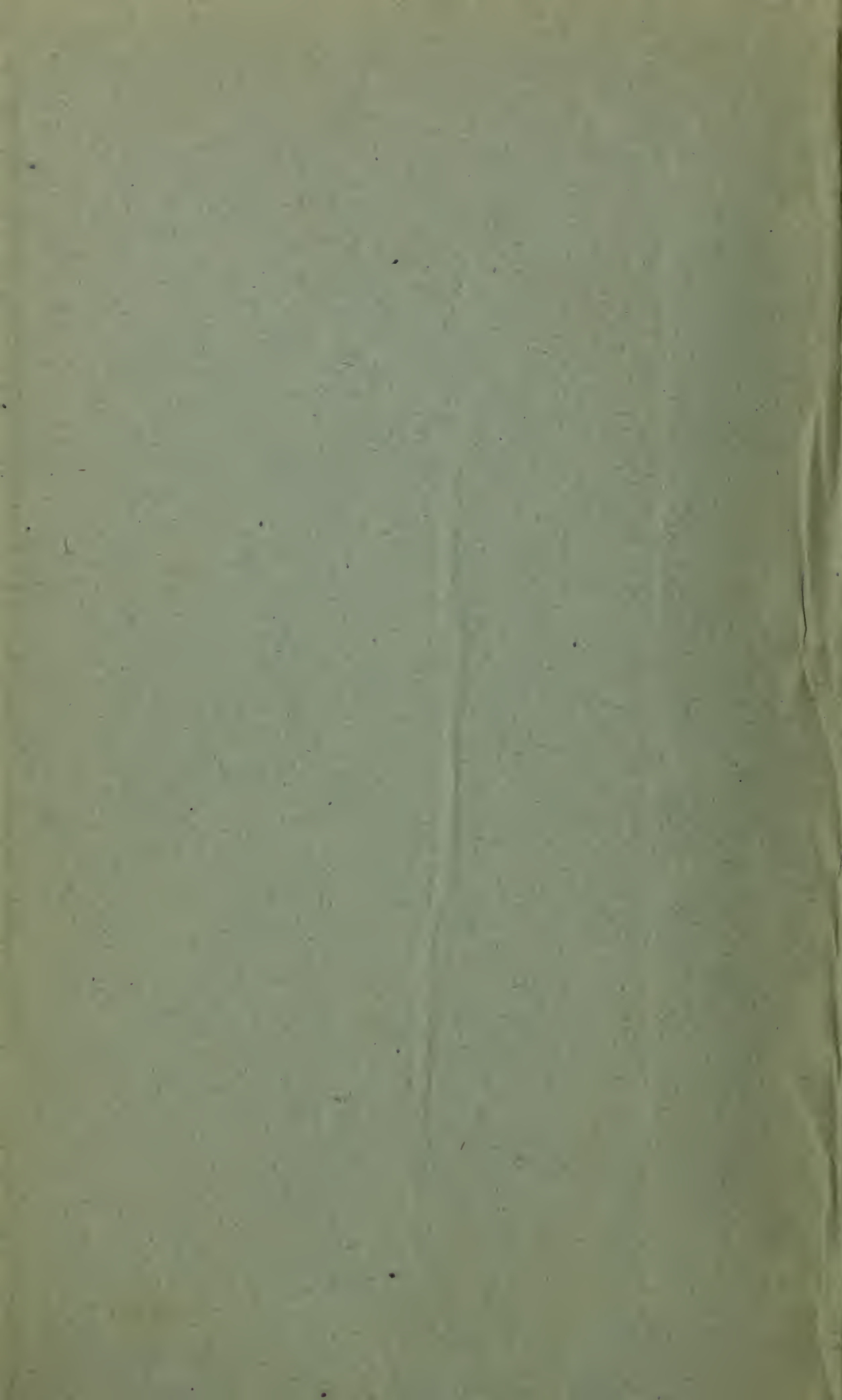
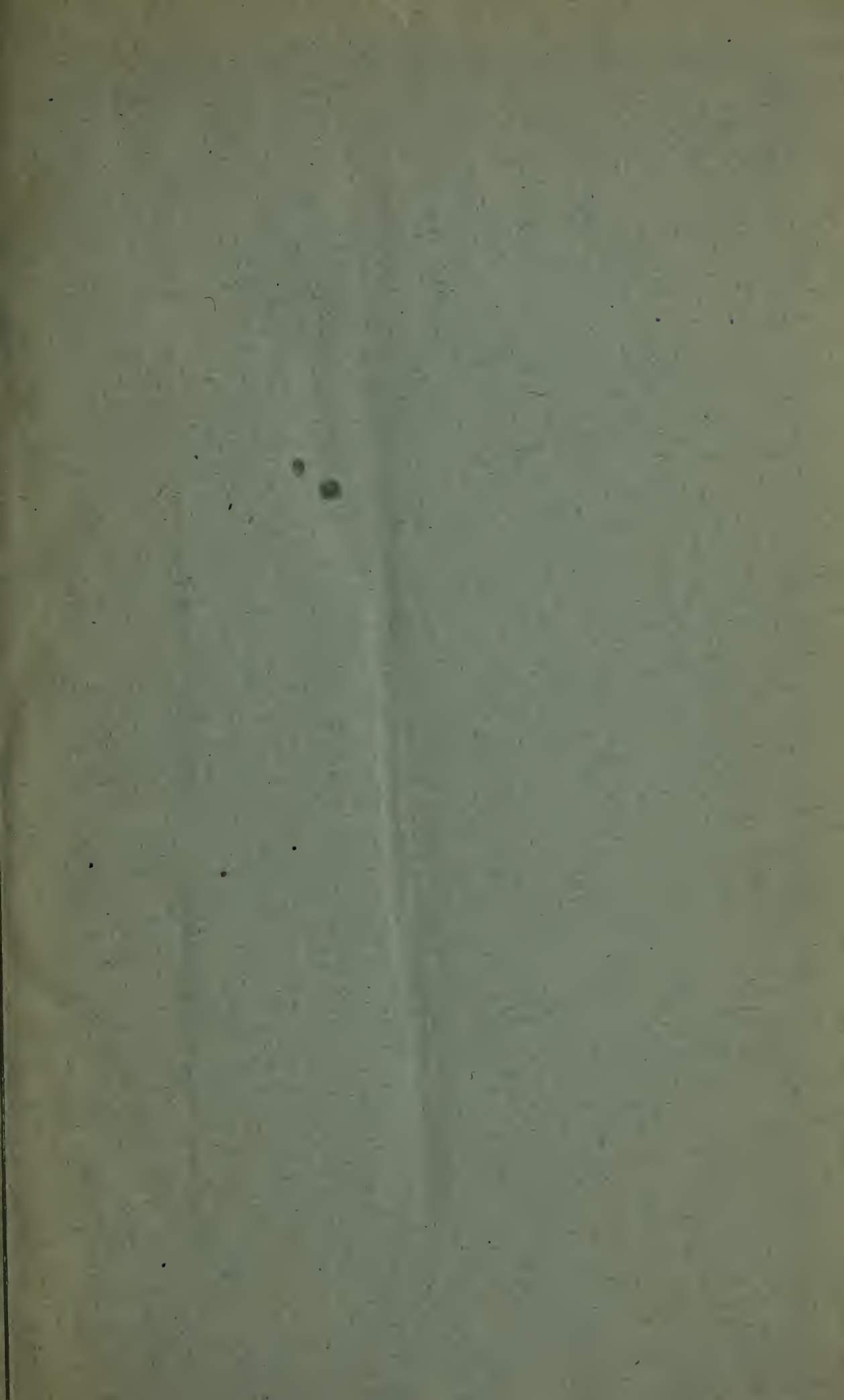




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AMERICAN ADDITIONS

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VOLUME I.



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AMERICAN ADDITIONS

TO

CHAMBERS'S ENCYCLOPÆDIA.

A A, CHRISTIAN KAREL HENDRIK, VAN DER, 1718-93; b. at Zwolle, Holland; a celebrated scholar and clergyman, author of works on natural science. His grandson, CHRISTIAN PIETER ROHDE, 1791-1851, b. Amsterdam; was a poet of considerable prominence. Another of the same family (presumably), JAN, is the author of a *Biographical Dictionary of the Netherlands*.

AACHEN. See AIX-LA-CHAPELLE, *ante*.

AA'GESEN, SVEND, one of the earliest historians of Denmark, who lived in the latter part of the 12th century. His history of that country covers from the 4th to the 13th centuries, both inclusive.

AALEN, a walled town of Würtemberg, on the Kocher, at the foot of the Swabian Alps. In the town are linen and woollen factories, ribbon looms, and tanneries; and near by are extensive iron works. A. was a free city from 1360 to 1863, and then annexed to Würtemberg. Pop., '71, 5552.

AALI PASHA', 1815-71; d. Constantinople. In 1834 he was secretary of legation to Austria; in 1853 in the British legation, and for a time *charge des affaires*. In 1840 he was under-secretary for foreign affairs; 1841 to 1844, ambassador to England, subsequently a member of the Turkish council of state and justice, minister for foreign affairs, and imperial chancellor. He was in the foreign office from 1846 till 1852; then promoted to be field marshal and pasha. About the close of 1852, he was, for a time, grand vizier or prime minister, which position he resigned, and was made governor-general of Smyrna, and afterwards of Brusa. In 1854 he was restored to power as foreign minister; in 1855 he attended the council at Vienna, and was once more made prime minister. He resigned Nov. 1, 1856, but the sultan kept him in the cabinet without official position. In 1858 he was again grand vizier, retired the next year, but returned again. In 1861 the sultan made him once more the head of the cabinet, but in the same year he resigned and accepted the portfolio of foreign affairs. In June, 1867, he was appointed regent of the empire during the sultan's visit to European courts. He bore a prominent part in the London conference of 1870, to settle upon Russia's questions concerning the opening of the Black Sea. He was firm, but moderate, and not only smoothed over many difficulties, but contributed much to the stability and importance of his country. He was of small size and indifferent appearance.

AALST. See AELST, *ante*.

AALTEN, a t. in the Netherlands, on the Aar, 29 m. e. of Arnhem; pop., '67, 6160.

AARAU, chief t. in the canton of Aarau, at the foot of the Jura mountains, on the right bank of the Aar, 41 m. n.e. from Berne. It is well built; has a town hall, barracks, several small museums, and a library rich in Swiss historical works. There are silk, cotton, leather, and cutlery manufactories, and an iron foundry. The town is famous for producing excellent mathematical instruments. The slopes of the mountains are covered with vines, and the vicinity is very attractive. Pop. 5449. Ten miles away, on the Aar, are the famous baths of Schinznach.

AARD-VARK, *Orycteropus capensis*, the Earth-pig; a plantigrade animal, class mammalia, order edentata; native and common in South Africa; resembling a short-legged pig; length, full grown, about 3 ft. 5 in.; head 11 in.; tail 1 ft. 9 in.; ears 6 in. It has a long, thin head, the upper jaw projecting over the lower; mouth small; tongue long, slender, flat, and covered with glutinous saliva to entangle ants. The ears erect and

pointed; eyes far up the snout; body thick and fat; limbs short and very strong. The skin is usually bare, but sometimes partially covered with stiff, reddish-brown hair; the tail is bare, thick at the base and sharp at the end. It is very timid, and hastens to burrow in the ground upon the least alarm. It feeds entirely on ants, going at dark to their hills and running its long tongue into a passage-way; the frightened ants are stuck in the saliva and devoured. The flesh is tolerable for food, and the hind quarters are sometimes smoked or salted and eaten.

AARD-WOLF, *Prates Lalandii viverna cristata*, the Earth-wolf; a quadruped of the digitigrade carnivorous mammalia; native of South Africa; looks like a cross between the fox and hyena, and is about the size of a full-grown fox, but standing higher on its legs; ears larger and less hairy, tail not so bushy. It is striped,* and might be mistaken for the hyena, from which it differs chiefly in a more pointed head, and a fifth toe on the fore foot. Its fur is ash-colored and woolly, and it has a coarse mane from head to tail, which is elevated when the animal is enraged, like the hair on a cat's back. Its muzzle is black and nearly naked; legs and feet dark brown in front and gray behind; ears dark brown outside and gray inside. It goes abroad only in the night, and then for food. It is fond of its kind, and a number will live in a single burrow. Being very timid, it is not easily caught, running rapidly despite its short hind legs.

AARIFI PASIA, a Turkish statesman, appointed minister of foreign affairs in 1877, having been minister of education, and also of justice, and twice envoy to Austria. He is one of the best scholars in Turkey, familiar with the principal languages of Europe, and has won a place in literature by translating *The History of the Crusades* from the French.

AARON OF ALEXANDRIA, the earliest writer on diseases who mentions the small-pox. He wrote in the 7th century.

AARSENS, FRANCIS VAN, 1572-1641; one of the greatest diplomatists of the United Provinces. He represented the States General at the French court many years, and was in diplomatic service in Venice, Germany, and England. Richelieu, with whom he had negotiations in 1624, ranked him as one of the three greatest politicians of the time. There is a stain on his memory because of his complicity in the death of Barneveldt, who was executed in 1619, by order of the States General, after a trial which was scarcely more than a mockery.

AASEN, IVAN ANDREAS, b. 1813; a Norwegian philologist. He is the son of a farmer; educated by his own exertions; studied botany, but turned his attention to the native dialects. In 1848 he published *Det norske Folkesprogs Grammatik*, and in 1850 added *Ordbog over det norske Folkesprog*, and still later a work on Norwegian proverbs. He was granted an annuity some years ago.

AASVÄR, islands off Norway, about lat. 66°, an important centre of herring fishery, in which more than 10,000 men are employed in December and January; but for the rest of the year the islands are almost deserted. The fish is the great Nordland herring, and the catch often reaches 200,000 tons in a season.

AB, the fifth month of the ancient Jewish year, now the eleventh (and in intercalary years the twelfth), in consequence of the transfer of new year from spring to autumn. On the first day of Ab there is a feast to commemorate the death of Aaron, and on the ninth the most solemn of all Hebrew feasts, to mark the destruction of the first temple by Nebuchadnezzar, 558 B.C., and the second temple by Titus, 70 A.D. Ab may begin as early as July 10, or as late August 7.

ABABDE, **ABABDEH**, or **ABADDIE**, an African people occupying the region between the Nile and the Red Sea, south of Kossier, and near the latitude of Dera, or Derr. They are distinct from Arabs, though they intermarry, and accept the religion of the Koran. As a rule they are faithless and treacherous. They have few horses, but fine breeds of camels and dromedaries. There are three tribes, numbering in all about 120,000. Some are agriculturists, but the great part are nomadic. They have considerable possessions, and a small trade in senna and charcoal, which they send to Cairo.

AB'ACO, or **LUCA'YA**, the largest of the Bahama islands, 80 m. long by about 15 m. wide, 150 m. e. of Florida, lat. 26° 30', long. 76° 57'. Pop. 2000. Ship-building, wrecking, and turtle fishing are the chief employments.

ABAD' I (**ABU AMRU IBN HABED**), the first Moorish king of Seville, and founder of the Abadite dynasty. His ancestors were from Syria, but he was born near the Guadalquivir, and brought up in Seville, where by generosity and hospitality he became so popular that the people, in 1015, elected him king. He ruled 26 years, and added Cordova to his dominions.

ABAD' II (**MOHAMMED IBN HABED**), 1012-69; son of A. I. He enlarged his father's dominions by adding Andalusia. He is said to have been cruel and relentless.

ABAD' III (**MOHAMMED IBN HABED**), 1039-95; son of A. II., a lover and patron of letters and writer of poetry. He was tolerant and kind, and peaceably added a part of Portugal to his kingdom. His chief opponent, Alfonso VI. of Castile, married A.'s daughter, and the alliance roused the jealousy of the smaller Moorish princes, who engaged the king of Morocco in a league by which A. and Alfonso were defeated.

Seville was spared from sack by A.'s prompt surrender. He was kept four years a prisoner in Morocco, and his daughters were compelled to spin wool for subsistence. A.'s verses, written while in captivity, are admired. He was the last of the Abadies.

ABAD'DON. See APOLLYON.

ABAKA KHAN, 1265-80; the second Mongol king of Persia, of the family of Genghis Khan. He completed the conquests begun by his father, and consolidated the Mongol rule over western Asia.

ABAKANSK', a fortified t. in Siberia, on the Abakan, near its junction with the Yenisei, 54° n. 91° 14' e. Pop. 1000. The town is in the mildest and most salubrious district in Siberia, and is noted for the great number of tumuli in the neighborhood, and for statues of men, some of them nine ft. high, and covered with hieroglyphics.

AB'ANA, and PHARPAR, "rivers of Damascus" (ii. Kings v. 12); probably the present Barada and Awaj, the former flowing through Damascus, and the other passing 8 m. to the south. Both rivers are lost in the marshes on the border of the Arabian desert. The plain of Damascus owes much of its fertility to the irrigation of these rivers.

ABANCAY', a t. in Peru, 65 m. w.s.w. of Cuzco, on the Abancay, over which is one of the finest bridges in South America. The town has extensive sugar refineries; sugar and hemp are cultivated, and silver is found in the mountains.

ABANCOURT, CHARLES XAVIER JOSEPH D', 1758-92, a French statesman. When the revolution of 1789 broke out he was captain of cavalry, but Louis XVI. made him minister of war. In 1792 he was imprisoned by the revolutionary tribunal as a foe to freedom; but while on the way from Orleans to Paris the transport was mobbed and he and his fellow-prisoners were butchered.

ABANO, PIETRO D', an Italian philosopher, 1250-1316; educated in Constantinople and Paris; professor of medicine in Padua; wrote on philosophy and medicine, and, like other learned men of his time, practised astrology, by reason of which he was accused of magic, and sentenced to be burnt; but he died in prison.

ABARBANEL. See ABRAVANEL.

ABARCA, JOAQUIN, a Spanish bishop, b. about 1780, d. 1844. For supporting the absolute rule of Ferdinand VII. he was made bishop of Leon; but he went with Don Carlos to Portugal and England, acting as his agent, though finally losing the pretender's regard. Banished from Spain, he sought a monastery at Lanzi, where he died.

AB'ARIM, a range of mountains in the land of Moab, e. of the Jordan and facing Jericho. The highest point was Mt. Nebo, the place where Moses closed his earthly career.

AB'ARIS, a Scythian priest of Apollo, to whom it was fabled the god gave a golden arrow on which to ride through the air. This dart rendered him invisible, and it cured diseases and gave oracles. A. gave the arrow to Pythagoras.

ABASCAL', JOSÉ FERNANDO, 1743-1821; a Spanish statesman and general; entered the army in 1796; governor of Cuba in 1762; viceroy of Peru from 1804 to 1816, and in the last year made a marquis. He was noted for administrative ability, firmness, and moderation.

ABA'TI, or DELL' ABBATO, NICCOLO, 1512-71; a fresco-painter of Modena. He assisted Primaticcio in decorating the palace of Fontainebleau. A.'s work has been highly praised by Lanzi, Algarotti, and others. One of his finest pieces in oil is the "Martyrdom of St. Peter and St. Paul," now in the Dresden gallery.

ABA UJ VAR', a county or district in Upper Hungary; 1117 sq.m.; pop., 66,195.

ABBADIE, JACQUES, D.D., 1658-1727; a French Protestant divine; b. in Berne, d. in London. Of poor descent, he was educated by his friends, and advanced so rapidly that at 17 he was granted the degree of doctor of theology. He spent several years in Berlin as minister of the French Protestant church, and in 1688 accompanied Marshal Schomberg to England, becoming minister of the French church in London. He was strongly attached to the cause of William III., who made him dean of Kilaloe. He wrote a defense of the English revolution, and an account of the assassination plot of 1692, the material for which he got from the state secretaries. He was able and eloquent, but is known chiefly by his works on the truth of Christianity and the divinity of Christ.

ABBÂS I, a renowned monarch of Persia, was the youngest son of shah Moham-med Khodahendah. He made a successful rebellion against his father; caused one or more of his brothers to be murdered, and took possession of the throne when but 18 years old, in 1585. He went against the predatory Uzbeks, who plundered Khorasan, defeating them in 1595 in a great battle near Herat, and driving them out of his domains. He was in almost continuous war with the Turks, over whom he gained many important successes, adding territory to his dominions. By a victory at Bassorah, in 1605, he extended his empire beyond the Euphrates, and Achmed I. was forced to cede Shirwah and Kurdistan. In 1618 he defeated the combined forces of the Turks and Tartars near Sultainch, and made an advantageous peace. But the Turks soon renewed the war, whereupon, in 1623, Abbas took Bagdad after a year's siege. When he died, in 1629,

his empire extended from the Tigris to the Indus. He distinguished himself not only by the successes of his arms and the magnificence of his court, but by many administrative reforms, especially encouraging commerce, to facilitate which he built important highways and bridges. He was tolerant to foreigners, especially Christians, though to his own family he was cruel, causing his eldest son to be killed, and the eyes of his other children to be put out.

ABBASIDES, THE, Caliphs of Bagdad, and the most famous of all the Saracen rulers. They claim to have descended from Abbas, the uncle and adviser of the prophet (566-652 A.D.); and they succeeded the Ommiads, who were caliphs of Damascus. The family of Abbas acquired great influence because of their near relationship to the prophet, and Ibrahim, fourth in descent from Abbas, gained several successes over the Ommiad armies, but was captured and executed in 747 by caliph Merwan. Ibrahim's brother, Abul-Abbas, whom he had named as his successor, assumed the title of caliph, and by a decisive victory near the river Zab, in 750, entirely overthrew the Ommiad dynasty; Merwan was executed, and the house of Abbas was firmly established in the government, though the Spanish possessions were lost by the establishment of the independent caliphate of Cordova. Almansur succeeded Abul-Abbas, and founded Bagdad as the seat of the empire. He fought with success against the Turks and Greeks of Asia Minor; but from this period the rule of the Abbasides was distinguished by the development of liberal arts rather than the extension of territory. The severity of Mohammed's religion was relaxed and the faithful yielded to the seductions of luxury. The caliphs Harun Al-Rashid, 786-809, and Al-Mamun, 813-833, attained world-wide celebrity for gorgeous palaces, vast treasures, and brilliant equipage, in which their splendor contrasted strikingly with the poverty of European sovereigns. Harun is well known as a hero of the Arabian Nights, and Al-Mamun as a patron of literature and science. But with all their splendor the caliphs were tyrants, and their memory is stained with deeds of blood wrought through jealousy or revenge. Within less than a century the domains of the Abbasides suffered dismemberment, and their power rapidly decreased. Rival sovereignties (the Ashlabites, Edristes, etc.) arose in Africa, and an independent government was instituted in Khorasan in 820, under the Taherites. In the west the Greeks again began to encroach; but the fatal blow came from a despised and almost savage race. The caliphs had long been waging war against the Tartars of Turkestan, and many captives taken in these wars were dispersed over the empire. Attracted by the bravery of these prisoners, and fearing rebellion among the subjects, Motassem (833-842), the founder of Samarah and successful opponent of the Greeks under Theophilus, formed bodyguards of the Turkoman prisoners, who speedily became the real rulers of the Saracen empire. Mota-Wakkel, son of Motassem, was assassinated by them in 861, and the succeeding caliphs were only puppets in their hands. The caliph Radhi, 934-941, was compelled to delegate to Mohammed ben Rayek, under the title of "commander of commanders," the government of the army and other important functions of the caliphate. Province after province proclaimed independence; the rule of the caliphs was narrowed to Bagdad and vicinity, and the house of Abbas lost its power in the east forever when Hulague, prince of the Mongols, set Bagdad on fire, and slew the reigning caliph, Motassem, Feb. 20, 1258. The Abbasides continued to hold the semblance of power in the nominal caliphate of Egypt, and feebly attempted to recover their ancient seat. The last of the A., Mota-Wakkel III., was taken by sultan Selim I., conqueror of Egypt, to Constantinople, and kept there some time as a prisoner. He returned to Egypt, and died in Cairo, in 1538, a pensioner of the Ottoman government, and the last of the Abbasides.

ABBÁS PASHA', 1813-54; grandson of Mehemet Ali, and viceroy of Egypt; active but not distinguished in Mehemet's wars in Syria. After Ibrahim's short reign, he took the throne (in 1848) as hereditary successor, but was a cruel and capricious ruler. He dismissed the Europeans in state service, and frustrated much of Mehemet's good work; but he successfully resisted Turkish attempts to lower the condition and prestige of Egypt, and assisted the Sultan in the Crimean war. It is supposed that he was murdered.

ABBATU'CCI, CHARLES, son of Jacques Pierre, 1771-96; an officer of artillery, and in 1794 Pichegru's adjutant; made general of brigade for bravery, and afterwards general of division. He died from wounds he received in an engagement with the Austrians at Hünningen, where Moreau erected a monument to his memory.

ABBATU'CCI, JACQUES PIERRE, 1726-1812; b. in Corsica; a rival and political opponent of Paoli; but he submitted to his control in the war with the Genoese. He became general in the royal army, but after the capture of Toulon resigned and went to France, where he was promoted to general of division. When the English fleet left Corsica, in 1796, he returned home.

ABBATU'CCI, JACQUES PIERRE CHARLES, 1791-1857; nephew of Charles; law officer under the restoration. After the revolution of 1830, he was made presiding judge at Orleans, and sent thence to the Chamber of Deputies. He was a leader of opposition to Guizot's ministry, and conspicuous at reform banquets. In the National Assembly in 1848, he was a vigorous opponent of the social democratic movement. He became a

warm supporter of Napoleon III., who made him minister of justice and keeper of the seals. His sons, Charles, Antoine Dominique, and Séveren, were supporters of the Bonapartes.

ABBEVILLE, a co. in South Carolina, between the Saluda and the Savannah rivers. The soil is good and well cultivated to cotton, corn, wheat, oats, and sweet potatoes. Area, 960 sq.m.; pop., '70, 11,916 white, 20,213 black. The Columbia and Greenville railroad runs through the n. part of the co. Co. seat, Abbeville.

ABBO CERNUUS, d. 923; a French monk, who wrote an epic poem describing the siege of Paris by the northmen in 385-87, at which he was present. Guizot published a French translation.

ABBO FLORIACENSIS, or ABBON OF FLEURY, b. 945; a French scholar, proficient in sciences, and distinguished in the schools of Paris and Rheims. He spent two years in England, helping archbishop Oswald of York in restoring the monastic system; was made abbot of Fleury in 960; was sent twice to Rome by Robert the wise, and each time ward off a threatened papal interdict. He was killed in 1004 while trying to quell a monkish revolt. He wrote, in epitome, the lives of the Roman pontiffs and some controversial works.

ABBOT, BENJAMIN, LL.D., 1763-1849; a New England teacher, who had among his pupils Jared Sparks, Daniel Webster, George Bancroft, Edward Everett, and others who became famous. For nearly 50 years A. was at the head of Phillip's Academy, in Exeter, N. H.

ABBOT, CHARLES. See COLCHESTER, LORD, *ante*.

ABBOT, EZRA, LL.D., b. 1819; son of a farmer; graduated at Bowdoin in 1840; spent five years in teaching in academies. In 1847 settled in Cambridge, Mass., and found employment in the libraries of Harvard college and Boston, pursuing private studies in philology and theology. In 1856 he was appointed assistant librarian in Harvard, with the exclusive duty of classifying and cataloguing the books. He resigned in 1872 to accept the Bussey professorship of New Testament criticism and interpretation in the Cambridge Divinity school. In 1852 he was a member of the American Oriental society, and became its recording secretary; in 1861 a member of the American Academy of Arts and Sciences; in 1871 University Lecturer on the Textual Criticism of the New Testament. Among his works are *New Discussions of the Trinity*, *Literature of the Doctrine of a Future Life*, as an appendix to Rev. W. R. Alger's *Critical History of the Doctrine*. He has edited, with notes or appendixes, Norton's *Statement of the Reasons for not Believing the Doctrines of the Trinitarians*, Lamson's *Church of the First Three Centuries*, and other controversial works; and has contributed to the pronouncement of names in Worcester's Dictionary; and also to the "North American Review," and other periodicals.

ABBOT, FRANCIS ELLINGWOOD, b. Boston, 1836; a graduate of Harvard, and editor of *The Index*, a journal of free religion. He has published papers in the "North American Review," and other periodicals.

ABBOT, GORHAM DUMMER, LL.D., b. Me., 1808; d. Mass., 1874; son of Rev. Jacob, and brother of the writers, Jacob and John S. C. He was educated at Bowdoin college; graduated in 1826; passed a short theological course at Andover, graduating in 1831, and was settled as Congregational minister at New Rochelle, N. Y., three years, in which time he wrote works for the American Tract Society. Quitting the pulpit, he established a female seminary in New York city (afterwards the Spingler Institute), and presided over it thirteen years, becoming one of the most skillful and scientific of teachers. He wrote *The Family at Home*, *Nathan Dickerman*, *Mexico and the United States*, *Pleasure and Profit*, and other works.

ABBOT, SAMUEL, 1732-1812; one of the founders of the theological seminary at Andover, Mass., toward which he gave \$20,000 in 1807, and \$100,000 more in his will. He was a successful merchant of Boston and a free donor to worthy charities.

ABBOT OF MISRULE (in Scotland the ABBOT OF UNREASON), the person who was selected to preside over the merry revels at Christmas in the middle ages.

ABBOTT, AUSTIN, b. Boston, 1831; brother of Benj. V. and co-laborer in the Digests. He has occasionally contributed to light literature, and, with his brothers Benjamin and Lyman, was author of two novels, *Concent Corners* and *Matthew Caraby*.

ABBOTT, BENJAMIN, 1762-96, a notable minister of the Methodist church, a native of Pennsylvania. He traveled and preached in his own and the adjoining states, and assisted greatly in building up the denomination. Though without education, A. was possessed of much natural eloquence.

ABBOTT, BENJAMIN VAUGHAN, b. Boston, 1830; son of Jacob. He was educated in New York, and admitted to the bar in 1851. He has produced many volumes of reports and digests of federal and state laws, and is a member of the national commission to prepare a digest of the laws of the United States.

ABBOTT, EDWARD, b. Roxbury, Mass., 1841; brother of Lyman. He has published religious works, and was for a time one of the editors of *The Congregationalist*, a

religious journal published in Boston. He has recently taken orders in the Episcopal Church, and is settled in Cambridge, Mass. He is one of the editors of *The Literary World*.

ABBOTT, JOHN STEPHENS CABOT, 1805-77; b. Maine; d. Conn.; brother of Gorham D. He was educated at Bowdoin and Andover; graduated in 1825; traveled in the United States and Europe to study systems of education; was ordained as a Congregational minister in 1830, and settled successively at Worcester and Roxbury and Nantucket, Mass. In 1833 he published his first book, *The Mother at Home*, and soon afterwards *The Child at Home*. About 1844 he devoted himself solely to literary work, and rapidly produced *Kings and Queens, or Life in a Palace*; *The French Revolution of 1789*; *History of Napoleon Bonaparte*; *Napoleon at St. Helena*; *History of Napoleon III.*; *History of the Civil War in America*; *Romance of Spanish History*; *History of Frederick the Great*; etc. His books have been widely circulated, and a number of them have been translated into other languages.

ABBOTT, LYMAN, D.D., b. Roxbury, Mass., 1835; brother of Austin. He graduated from New York university in 1853, and went into the practice of law with his brother. Afterwards he studied theology with his uncle, Rev. J. S. C., and was ordained a Congregational minister in 1860, settling as pastor at Terre Haute, Ind., the same year. He was chosen secretary of the American Union Freedmen's Commission, holding the place till 1868. He was pastor of the New England church in New York, 1866 till 1869, when he gave his whole attention to literature. Among his works are: *Results of Emancipation in the United States*; *Jesus of Nazareth: His Life and Teachings*; and *Old Testament Shadows of New Testament Truths*. He edited *Sermons and Morning and Evening Exercises* from Henry Ward Beecher's writings. Later, he was one of the editors of Harper's *Monthly Magazine*, and principal editor of the *Illustrated Christian Weekly* of New York. He is now associated with Rev. Henry Ward Beecher in the editorship of the *Christian Union*, and is preparing and publishing a series of commentaries on the New Testament.

ABBREVIATIONS (*ante*). In the United States there are fewer A. used than in England, as there are no titles except the names of offices. But a great variety are peculiar to the country, such as *Hon.* for member of Congress, and indeed almost any one of note; *Esq.*, absurdly written after names in addressing letters. In politics, *Rep.*, *Dem.*, *Con.*, *Rad.*, for Republican, Democratic, Conservative and Radical parties; *U. S.*, for House of Representatives; *Sen.*, for Senate; *U. S. S. Ct.*, for United States Supreme Court, etc. Names of States are almost invariably abbreviated, and the contractions are well known; also *Co.* for county. Military and naval, such as *Maj.*, *Gen.*, *Col.*, *Lt.*, *Adm.*, *Com.*, *Capt.*, are used. In commerce, *C. O. D.*, "collect on delivery," is much used; A 1 denotes ships or anything of the first class; *fancy*, applied to stocks that are not "regular." In money, only the \$ mark and *cts.* are common. Certain trades have their peculiar contractions, such as booksellers, paper-makers and others. In printing, the use of A. depends much upon the nature of the work. If technical, as on chemistry, arithmetic, or astronomy, contractions or peculiar signs are used in profusion, for oxygen and other elements and combinations; for notation, relation, and equality; for sun, moon, planets, and their aspects. In weights and measures the *lb.*, *oz.*, *ft.*, *deg.*, etc., are used. The legal profession has its peculiar contractions. Time is noted in *yr.*, *mo.*, *hr.*, *min.*, and *sec.* Orders in *F. and A. M.*, *I. O. of O. F.*, etc. The church in *Abp.*, *Bp.*, *Dea.*, *Rev.*, *D. D.*; and *M. E. P.*, *Bap.*, *R. C.*, etc.

ABBT, THOMAS, 1738-66; a German author, educated at Halle university, and professor of mathematics at Rinteln. He did much toward the improvement of the language of his country. Of his books the more important are those *On Merit*, and *On Dying for our Native Country*.

ABDALLAH-BEN-ABD-EL-MOTTALIB, 545-570; the father of Mohammed. He was an only child, and was about to be sacrificed by his father when another person interfered and persuaded the father to sacrifice a hundred camels instead of the boy. Soon after A. married a daughter of Wahb, a Benu Zahra chief, and of this union came the great prophet.

ABDALLAH-BEN-AL-AFTAS, 1004-60; founder of the dynasty of Bence Al-Aftas in Africa. His military talents secured for him the title of "The Victorious."

ABDALLAH-BEN-YASEEN lived in the early part of the 11th century, and founded the Almoravides dynasty in Northern Africa. He was a zealous follower of the prophet, and converted pagans by the sword rather than the book. Though holding supreme authority for a long time, he was content with the title of "Theologian." The reign of his successors lasted about a century.

ABDALLAH-BEN-ZOBAÏR, b. about 622, d. 692; the first of Mohammed's disciples; son of Zobair, one of the prophet's friends and companions. His mother was a sister of Mohammed's favorite wife. Abdallah opposed Ali, the elected successor and nephew of the prophet, and renewed his struggle for supremacy after Ali's assassination. He seized Mecca, holding it against Yezid, caliph of Damascus. During the siege the temple of the Holy Chaba was destroyed, but Yezid's death saved the city from capture. A. was acknowledged caliph of Mecca, and rebuilt and restored the city by 685. The

Damascus caliphs renewed the war, and Mecca was again besieged, but stoutly defended by A. in his seventieth year. Finally Mecca was taken by assault, and A., who retreated within the Caaba, was slain.

ABDALS, Persian religious fanatics who deem it meritorious to slay any one of a different faith, and if slain themselves in the attempt are considered martyrs.

ABDAS, a saint in the Roman Catholic and Greek churches. He was a bishop in Persia about the beginning of the 5th c. who destroyed a temple of the fire-worshippers, refusing to rebuild it, though commanded by the king to do so. In retaliation A. was killed and all the Christian churches were destroyed, the persecution lasting more than a quarter of a century, and causing a war between Rome and Persia.

ABD-EL-HALIM, b. in Cairo, 1826; son of Mehemet Ali; educated in Paris. Before the viceroy of Egypt was recognized by the sultan, Halim was a member of the family council; in 1836 he was governor of Khartoom.

ABD-ËL-HAMID, the adopted name of DE COURET, a French traveler in the East, who was sent on a mission to Timbuctoo in 1848. Alexander Dumas used his adventures in "The Pilgrimage of Hadji Abd-el-Hamed Bey," 1855.

ABD-EL-WAHÂB'. See WAHABIS, *ante*.

ABDE'RA, a maritime t. of Thrace, e. of the mouth of the Nestus. About 400 B.C. it was a flourishing place. The inhabitants became proverbial for stupidity, though such men as Protagoras, Democritus, and Anaxarchus, the Philosophers, Hecateus, the historian, and Nicænetus, poet, were born there.

AB'DIEL, in "Paradise Lost," the faithful angel who opposed the revolt in heaven begun by Satan.

ABD-UL-AZIZ, b. Feb. 9, 1830; d. June 4, 1876; second son of Mahmoud II., and thirty-second sultan of the Turkish empire. In early life he had a fondness for agriculture, and established a model farm. On succeeding his brother Abd-ul-Medjid, June 25, 1861, he gave many promises of reform, and was thought to be brave and patriotic. He began by reducing his own civil list to \$3,000,000, and dismissing his brother's seraglio. But his reforms achieved nothing, and dissatisfaction at home and abroad became intense. In 1867 he made a tour of Europe, visiting the Paris exhibition and several capitals, in which he spent a vast amount of money to little purpose. The knowledge of better civilization determined him to do something practical, and in 1868 he changed the formation of the council of state, which he wished to make the central government for the empire. To his new council of thirty-four Mohammedans and sixteen Christians he promised more reform and an attempt to assimilate with western civilization; but the war in Candia took his attention, and a war with Greece was probable. The Greek difficulty was arranged by a conference at Paris, and the sultan turned his attention to Egypt, where the Khedive, Ismail Pasha, contemplated casting off Turkish allegiance; but instead of rebelling Ismail visited Constantinople to effect an arrangement. Learning the sultan's financial embarrassment, he got important concessions, among them a new law of succession for his house, and nearly all the prerogatives of an independent sovereign. The sultan's affairs grew desperate; one ministry followed another at short intervals, and Ignatieff, the Russian ambassador became all-powerful with the distressed ruler. When the revenues were so low as barely to pay interest on the public debt, a revolt began in Herzegovina, and soon spread over all Bosnia. With an empty treasury, the sultan could not properly meet this rebellion, and the *softas* (theological students) demanded his abdication; the council of ministers determined upon his removal, and made his nephew, Murad V., his successor. A few days after his deposition (June 4, 1876), Abd-ul was found dead in his apartments. A jury of physicians decided that he died from severing the arteries of his arms, and it was believed that he committed suicide. He had five recognized children: Yusef, who he meant should be his successor; Sultana Salikhe, Mahmoud Jemil, Mehmed Selim, and Abd-ul-Medjid.

ABD-UL-HAMID II., b. Sept. 22, 1842; Sultan of Turkey; second son and fourth child of Abd-ul-Medjid; succeeded his brother, Murad V., Aug. 31, 1876. He was with Murad and his uncle (Abd-ul-Aziz) at the Paris exhibition, 1867. His early life was inconspicuous, but he had a liking for European manners, and a strong taste for geography, making a vast collection of maps, military and statistical. When he came to the throne he had a wife and two children brought up with him at the table, his home-life having been free and familiar. He is ranked as an old or orthodox Turk; though not extreme, yet a strong opponent of the young Turkish party, and is an abler man, physically and mentally, than the brother he succeeded. He is the thirty-fifth in male descent of the house of Othman, the founder of the empire, and the twenty-eighth sultan since the conquest of Constantinople.

ABD-UL KERIM PASHA', b. 1807; in 1877 commander-in-chief of the armies of Turkey. His military education was obtained in Vienna, where he also mastered the German tongue. His promotion in the army was rapid, and he served in all the wars of his country in recent times. His successful campaign in Servia in 1875 secured to him the position of commander-in-chief; but on account of inactivity in opposing the advance

of the Russians he lost favor and was removed. He is resolutely opposed to Christians, intractable to superiors, but much loved by soldiers.

ABD-UR-RAH'MAN, or ABD-ER-RAHMAN, I., b. in Damascus, 731—d. 787, the first of the Omiades family in Spain. After the massacre of his family, he hid himself in Mauritania, until called by his friends to establish order in Spain. He landed in Andalusia in 755, and soon had a large army with which he entered Seville, where he was acknowledged sovereign. He defeated a larger army under the most powerful of the emirs, and firmly seated himself on the throne at Cordova. The eastern caliphs sent two fruitless expeditions against him. He planned and built the magnificent mosque in Cordova, on which it is said he worked an hour a day as a common laborer; and he planted the palm tree from which all the palms in Spain are descended.

ABD-UR-RAH'MAN, or ABD-ER-RAHMAN, III., called "The Defender of the Religion of God," was the first caliph of Cordova, ruling from 912 to 961 A.D., when he died, aged 73. In his time the Mohammedan rule in Spain reached its greatest power and splendor. His own palace was of wonderful magnificence, having an audience chamber furnished with images of gold of the finest workmanship, and a roof covered with the same metal. A. was not only a great ruler, but a liberal patron of literature and art.

ABECEDA'RIANS, a sect of German anabaptists, followers of Storck, a disciple of Luther. They believed it was best not to know how to read, since the holy spirit would convey knowledge of the scriptures directly to the understanding.

A'BECK'ET, GILBERT ABBOTT, b. London, 1811; d. Boulogne, 1856; an English humorous writer; at an early age he wrote burlesque dramas. He was correspondent and contributor for several journals, particularly *Punch* and *Figaro* in London. His principal works are: *Comic Blackstone*, *Comic History of England*, *Comic History of Rome*, *The Quizziology of the British Drama*, and many articles in *Punch*. In 1849 he was a police magistrate, in which office he displayed remarkable ability. His widow was granted a pension of £100 a year.

A'BECK'ET, THOMAS. See BECKET, *ante*.

ABEEL', DAVID, D.D., b. New Brunswick, N. J., 1804; d. Albany, N. Y., 1846; many years a missionary in eastern Asia, and an enthusiastic advocate of missions to the heathen. In England he assisted in forming the society for promoting the education of women in the east. He published his life and travels, and *The Claims of the World to the Gospel*.

A'BEGG, JULIUS FRIEDRICH HEINRICH, German jurist; 1796-1848; he lectured on law at Königsberg in 1826; was professor of law at Breslau, and delegate of the legal faculty to the Prussian national synod in 1846. A. was an influential writer upon criminal administration.

A'BEL, NIELS HENRIK, 1802-29; a Norwegian mathematician. For so short a life the extent and thoroughness of his mathematical investigations and analyses are marvelous. His powers were shown in a remarkable degree in his development of the theory of elliptic functions. Legendre's eulogy, "What a head that young Norwegian has," is the more forcible, because the French mathematician had occupied most of his lifetime with those functions. Abel's works were published by the Swedish government in 1839.

ABEL DE PUJOL, ADRIENNE MARIE LOUISE GRANDPIERRE DEVERZY, wife of Alexandre, and his pupil before marriage. She made her first appearance as a painter in 1836 with a work representing an artist's studio, and painted portraits, and a scene from *Gil Blas*.

ABEL DE PUJOL, ALEXANDRE DENIS, 1785-1861; a French painter; a pupil of David, and a historical painter of the older classical school. Most of his work is in French churches.

ABEN. See BEN, *ante*.

ABENA'QUIS, or ABNAKIS, Algonquin Indians, once occupying Maine; the Canabis, or Abenakis, on the Kennebec; the Etechenims towards the St. John; the Pennacooks of the Merrimack; and probably the Sokokes further west. The A. were friendly with the French, and assisted them in various conflicts and frays during the Canadian wars. Their best known leader was Father Râle, a Jesuit missionary; but he was killed and the tribe nearly destroyed at Norridgewock in 1724. A large portion of the A. went to Canada. The descendants of those who remained in New England are the Penobscots and the Passamaquoddys. During our revolution the A. Indians were generally on the side of the colonies. Father Râle mastered their language, and made a dictionary of it. See ALGONQUINS, *ante*.

A'BENSBERG, a t. in Lower Bavaria, 18 m. s.w. of Ratisbon. It has warm springs and fine castle ruins. April 20, 1809, Napoleon here defeated the Austrians and opened the way for the victory of Eckmühl.

ABERBROTHWICK. See ARBROATH, *ante*.

AB'ERCROMBIE, JAMES, 1706-81; a British general, b. in Scotland. He was commander-in-chief in America in 1758, and in July of that year was defeated in an attack upon Ticonderoga, losing heavily in men. He was superseded by Sir Jeffrey Amherst, who recaptured Ticonderoga and Crown Point. Returning to England he became a member of parliament and deputy-governor of Stirling Castle.

AB'ERCROMBY, DAVID, a Scotch metaphysician, who died early in the 18th c., of whom little is known except through his writings. He had been a Roman Catholic priest, but abjured and published his reasons in *Protestancy safer than Popery*, in 1686. His most notable work is *Discourse on Wit*, published in 1685, which has been ascribed to Patrick Abercromby and other authors. In medicine he is known through his *Nova Medicinæ Praxis, De Pulsus Variatione*, and others on the effect of salivation, etc. His *Opuscula* were collected in 1687.

ABERDARE, a t. in Wales, Glamorgan co., on the right bank of the Cynon, 4 m. s.w. of Merthyr-Tydvil, in a rich mineral district, having extensive coal and iron works. Tin works have recently been opened. A. is connected with the coast by a canal and railway. Its growth of late years has been remarkable. Pop., '41, 6471; in '71, 37,744.

ABERDEEN, a t., the co. seat of Monroe co., in n.e. Mississippi, on the w. bank of the Tombigbee river; 233 m. from Mobile by the Mobile and Ohio railroad. It has steam-mills, a cotton press, a fine court-house, a seminary for women, and a large trade in cotton. Pop. '80, 4000.

AB'ERNETHY, JOHN, 1680-1740; b. Londonderry; an Irish dissenting minister, son of a dissenter. He was educated at Glasgow and Edinburgh, and licensed to preach before the age of 21. He was ordained at Antrim in 1703; in 1717 he was invited to a congregation in Dublin, as colleague of Rev. M. Arbuckle, but he declined and remained at Antrim. This refusal was considered ecclesiastical rebellion, and a fierce controversy ensued, the parties dividing into "subscribers" and "non-subscribers." Though himself strictly evangelical, A. and his associates were remotely the occasion of the contest which ended in eliminating Arian and Socinian elements from the Irish Presbyterian church. In 1726, A. and all the "non-subscribers" were turned out with due ban and solemnity. Yet only four years afterwards he was called to a "regular" congregation in Dublin. In 1731, in the controversy regarding the test act, A. took broad ground "against all laws that, upon account of mere differences of religious opinions and forms of worship, excluded men of integrity and ability from serving their country." He was a century ahead of the time, having to argue against those who denied that a Roman Catholic or a dissenter could be a "man of integrity and ability." A. was foremost where unpopular truth and right were to be maintained, and his *Tracts*, collected after his death, did good service for generations.

AB'ERT, JOHN JAMES, 1787-1863; an American military engineer. He was educated at West Point, and long employed in the war department. He participated in the battle of Bladensburg, Aug. 4, 1814. In 1829, he was lt.-col. in command of the engineers and head of the topographical bureau. In 1832-33 he was commissioner for Indian affairs, and in 1838 made col. of the corps of engineers, having charge of the topographical service of the government until his retirement, Sept. 9, 1861.

ABES'SA, a damsel in Spenser's poems, impersonating abbeys and convents. When Una asked if she had seen the red cross knight, A., frightened at the lion, ran into the house of Blind Superstition, and closed the door, which the lion broke open. The meaning is, that when Truth came, the abbeys and convents were alarmed and barred her out, but England (the lion) broke in the door.

AB'GAR, the title of a line of kings of Edessa, in Mesopotamia. One of them is known from a correspondence which he is said to have had with Jesus Christ. A letter of A. entreating Jesus to come and heal him of disease, and offering him an asylum from the wrath of the Jews, together with the answer of Jesus, promising to send a disciple to heal A. after his ascension, are given by Eusebius, who professed to believe the documents to be genuine. The same opinion has been held by scholars here and there, and by many unlettered persons down to our own times; but there can be no reasonable doubt that the whole correspondence is fabulous. It has also been stated that A. possessed a picture of Jesus, and the credulous may still find such a picture either in Rome or Genoa. Still others report A. as the possessor of the handkerchief which a woman gave Jesus to wipe the sweat from his brow as he toiled under the weight of his cross, and say that the features of the Saviour are miraculously imprinted thereon.

A'BIAD, BAHR-EL, the "White Nile," the western branch of the Nile above Khartoum. See NILE, *ante*.

ABI'ATHAR, a Jewish high priest; son of Abimelech, slain by Saul for receiving the fugitive David, to whom he was faithful, especially during Absalom's rebellion. For taking part in the rebellion of Adonijah, A. was deprived of his priesthood by Solomon, and banished.

A'BIB, the first month of the Jewish ecclesiastical year, and the seventh of the civil year; also called Nisan. It is rather a name for the season when new grain appears than for a month. According to the rabbins it began with the new moon of March.

A'BICH, WILHELM HERMANN, b. Berlin, Dec. 11, 1806; a German naturalist. He graduated in 1831, and in 1842 became professor of mineralogy in the university of Dorpat, and in 1853 member of St. Petersburg academy of sciences. A. has explored the Caucasus, Russian Armenia, northern Persia and Daghestan, and published several books on the geology, etc., of those regions.

ABIMELECH, a son of Gideon. When his father refused to take the title of king either for himself or children, A. set out to claim the sovereignty, slew seventy of his brothers, and was declared king. Three years afterwards the Shechemites made an unsuccessful attempt to throw off his rule. After destroying Shechem, A. went against Thebes, which had revolted, and here, while storming the place, was struck on the head by a piece of millstone thrown from the wall by a woman. To avoid an ignominious death he ordered his sword-bearer to run him through. His reign is regarded as the first attempt to establish a monarchy in Israel.

ABIMELECH, a Philistine king, to whom Abraham represented Sarah to be his sister, and not his wife. Upon Abimelech soliciting her company, the fraud was exposed.

ABINGDON, a city in Knox co., Ill., on the line of the Chicago, Burlington and Quincy railroad, 85 m. n.e. of Quincy. It is the seat of the Hedding Methodist Episcopal college, and of the Abingdon college, under the management of the Christian denomination. Pop. '70, 948.

ABINGDON, the capital of Washington co., Va., 315 m. w.s.w. from Richmond. The co. was organized in 1776, and was the first locality named after George Washington. The town has good schools for girls, and a literary institute. Pop. '70, 3163.

ABINGER, JAMES SCARLETT, Lord, b. about 1769, d. 1844; an English lawyer, better known as Sir James Scarlett. He was a member of parliament for Peterborough 1818-30, and later for Malden, Cokermonth and Norwich. From a moderate whig he became a strong tory. He was a popular advocate, and had remarkable power in addressing juries; was attorney-general two years; in 1834 appointed lord chief baron of the exchequer, and Jan. 12, 1855, made a peer with the title of baron.

ABINGTON, FRANCES, b. 1731, d. London, Mar. 4, 1815; a famous English actress, daughter of Barton, a common soldier. As an errand-girl, she picked up French from a milliner. She became a flower-girl around theatres, and made her first appearance at the Haymarket as "Miranda," in "The Busybody," soon after marrying Abington, her music master, from whom she separated. She was a favorite in Dublin, opening with "Kitty," in "High Life Below Stairs," for Tate Wilkinson's benefit, who gives an animated picture of her success. The headdress she wore was adopted by the women of fashion, and the "Abington cap" became famous. Returning to England in 1765, she was warmly received by Garrick. After the retirement of Mrs. Pritchard and Kitty Clide she had no rivals on the London stage, and became the first comic actress of the period, appearing last, April 12, 1799. She left legacies to the theatrical funds.

ABIOGENESIS (See GENERATION, SPONTANEOUS, *ante*), the name for the supposed production of living matter from non-living; one of the fundamental and oldest questions in biology; recently much studied because of more accurate means of experiment, and partly because of its important bearing on evolution, correlation of forces, and the theory of infectious diseases. Though the doctrine of A. may not be said to be either established or refuted, we can believe in gradual progress towards a solution. The defenders of A., while interpreting the results of past observations in their favor, are less disposed to rest on these, preferring to argue from such wide analogies of evolution and correlation as seem to support their doctrines. Haeckel embraces A. as a necessary and integral part of the theory of universal evolution; and Huxley, from the other side, confesses that if it were given to him to look beyond the abyss of geologically recorded time to the more remote period when the earth was passing through early physical and chemical conditions, he should expect to be a witness of the evolution of living protoplasm from non-living matter. Thus it is not so much on the ground of fact and experiment that abiogenesists are convinced of the truth of their doctrine as because it seems to gain confirmation from a much wider scope: because it aids the theory of evolution by tracing organic into inorganic matter; because it fosters the increasing unpopularity of the hypothesis of a special vital force; because it would well agree with the principle of uniformity, and by disclosing the existence of unknown worlds of material for development would relieve natural selection from the immense labor of evolving all species from one or a very few primary forms.

ABIPONES, South American Indians, living between Sante Fé and Santiago, driven from Paraguay by the Spaniards. They are chaste and otherwise virtuous except that they practice infanticide. It has not been discovered that they have any idea of God. The men seldom marry before 30 years old; the girls are bought from their parents, but often repudiate the bargains and run away from their husbands. They suckle their infants till two years old, which may be an inducement to killing them. The men are brave in war, good horsemen and excellent swimmers.

ABKHA'SIA, or **ABASIA**, a part of Asiatic Russia on the Black sea, bet. 42° 30' and 44° 45' n. and 37° 3' and 47° 36' e. High mountains separate A. from Caucasia; on the s. it is bounded by Mingrelia, and s.w. by the Black sea. The country is mountainous, with well watered valleys and mild climate. Grain, grapes, and other fruits are raised. honey is exported to Turkey, and excellent arms are manufactured. Some of the inhabitants till the soil, some raise cattle and horses, and some are pirates and robbers. There still continues a considerable trade in slaves. This country was subdued by the emperor Justinian, who introduced the Christian religion. Since then, Persia, Georgia, and Turkey have ruled; the latter expelling Christianity and establishing Moslemism. By the treaty of Adrianople Russia obtained the fortresses in the territory, but until the insurrection in 1866 the native chiefs had almost unlimited power. Pop. est. from 50,000 to 250,000. Chief t., Sukumkaleh.

ABLUTION, a symbol of purification, as when Aaron and his sons were dedicated to the priestly office. A. was required of all the Israelites as a preparation for receiving the law at Mt. Sinai. It was a religious custom with other nations also, particularly for those to be inducted into the mysteries of Eleusis. Priests among the Hebrews were required to wash their hands and feet before approaching the sacred altar; and in the early Christian church, officiating ministers laved their hands in view of the people immediately before the communion services. Among the Egyptians A. was carried to great excess. Herodotus says their priests shaved the entire body once in three days, so that no unclean thing should be upon them in the time of worship, and that they bathed in cold water twice in the night and twice in the day time. Mohammedans, both priest and lay, are noted for their frequent washings. The law of Moses directed A. for physical defilements also, and specified periods when uncleanness should cease. This, too, is a Moslem practice. A. was a sign of a declaration of innocence, and in the case of one found slain, the murderer being unknown, the rulers of the city sacrificed a heifer, and the nearest of kin of the person slain washed their hands over the sacrifice, declaring, "Our hands have not shed this blood; neither have our eyes seen it." Pilate's hand washing has been thought to be prompted by the Hebrew custom; but such A. was the custom on many occasions among the Romans and Greeks. The Pharisees were so excessive in A. that they were rebuked for the hypocrisy of it. They had rules so exact that one could scarcely rise up or sit down without some infraction of them. They extended A. to inanimate objects also, requiring the cleansing (ceremonially, not merely for cleanliness) of pots, dishes, tables, etc. A. is a ritualistic term in Roman Catholic service for the use of wine and water after the eucharist, to cleanse the cup and the fingers of priests. The Greek church has A. as a ceremony seven days after baptism.

AB'NER, the son of Ner, and uncle of Saul and commander of his army. After Saul's death, the tribe of Judah recognized David, while Abner prevailed upon the other tribes to recognize Saul's son, Ishbosheth. David sent his army, under Joab, into the field, and A. was defeated. In his flight, A. being hotly pursued by Asahel, turned and slew him. According to usage, Joab, as next of kin to Asahel, became the avenger of blood. Afterwards A. went over to David, who promised to make him chief of the armies on the reunion of the two kingdoms; but A. was killed by Joab and his brother Abishai. Probably not only the avenging of Asahel, but jealousy lest A. should rise above him, moved Joab to the slaying.

A'BO-BJÖRNEBORG, a department of Finland, on the gulfs of Finland and Bothnia, 9895 sq.m. It has general commerce, ship building, and government factories. Pop. '67, 319,784; chief t., Abo.

ABOMA'SUM, the fourth stomach of ruminating animals, or the *rennet*. From the omasum the food is deposited in the A., a cavity considerably larger than either the second or third stomach, although smaller than the first one. The A. is that part of the digestive apparatus which is analogous to the single stomach of other mammalia, as the food there undergoes the process of chymification, after being macerated and ground in the first three stomachs.

ABO'MEY, the capital of Dahomey, West Africa; 7° n. 2° 4' e.; about 60 m. n. of Whydah, the port of the kingdom. A. is a clay-built town, surrounded by mud-built walls and a moat, and is spread over a large area, some of which is under cultivation. The houses stand far apart; there are no regular streets, and the town is very dirty. There are four market-places for trade in palm-oil, ivory and gold, the business being done by Mohammedan traders. In A. is the palace of the king of Dahomey, which is frequently the scene of human sacrifices. There is a "custom" (sacrifice) held annually at which many criminals and war-captives are slaughtered; and whenever a king dies there is a "grand custom" at which as many as 2000 men and women have been butchered. The slave trade still prospers, neither Great Britain nor any other government being able to stop it, unless by a war of extermination. The pop. is about 30,000.

ABOMINATION OF DESOLATION, the Roman standard which was set up in the temple of Jerusalem, to which the soldiery offered sacrifices as to an idol.

ABORTION (*ante*). In the U. S. statutes vary in defining A., but the latest of N. Y. may serve as a sample of the tenor of legislation. They are (Rev. Stat. part iv. chap. i. title 2, sec. 9-12.): "Any person administering, prescribing, advising, or

procuring to take by a woman with child any drug or thing whatever, or advising or procuring her to submit to operation with intent to procure miscarriage, unless necessary to preserve her life, shall, if the woman or child die through such means, be guilty of manslaughter in the second degree, punishable not less than four nor more than twenty years in state prison." A pregnant woman voluntarily causing A., except to preserve her life, suffers four to ten years. The sale of drugs and instruments for such purpose is criminal, whether to a woman pregnant or not; and the latest law makes the advertising of such medicines or instruments a misdemeanor. Convictions for actual criminal abortion, however, are rare, as it is naturally one of the most secret of crimes and among the most difficult to prove.

ABRAHAM'S BOSOM, a synonym among the Jews for felicity. In reclining at table, a custom almost universal in the East, the second person's head would be near the bosom of the first one, who might be the host or some more distinguished man. To be in that position to his bosom was to be the preferred friend or guest. While Dives was in torment, Lazarus was in A.'s B.

ABRANTES, a t. in Estramadura, Portugal, on the Tagus, 70 m. n.e. from Lisbon, in a fine situation. The hill slopes around it are covered with olive-trees and vineyards, and there is considerable trade in fruit, corn, and oil. The town is strongly fortified, and is an important military position. At the convention of Cintra it was ceded to Great Britain. From this town marshal Junot took his title of duc d'Abrantes. Pop. about 600.

ABRAVANEL', or ABARBANEL', ISAAC BEN JUDAH, b. Lisbon, 1437, d. Venice, 1508; a Jewish rabbi of Spain, who claimed descent from king David. He was remarkably learned, especially in biblical literature. In early life A. was employed in financial matters by Alfonso V., but after that king's death he and the other ministers were banished from Portugal and their property was confiscated. In Spain he made a fortune as a merchant, and was in high favor with Ferdinand and Isabella in 1487, but the decree of 1492 banished all Jews from Spain, and A. fled to Naples, where he found royal favor, but was again obliged to fly when Naples surrendered to the French in 1494. He settled last at Venice. Though so much driven about, he wrote many works, and was esteemed one of the ablest men of his time. His writings were mainly in defence and exposition of the Hebrew religion. One of his sons wrote a work in Italian.

ABSINTHE' (*ante*), or WORMWOOD, spirits prepared from the leaves and flowering tops of *artemisia absinthium*, united with angelica root (*archangelica officinalis*), sweet-flag root (*acarus calamus*), dittany leaves (*origanum dictamnus*), star-anise fruit (*selicium anisatum*), and other aromatics, macerated in alcohol eight days and distilled. The product is an emerald colored liquor, to which anise-oil is added. This is the genuine French *extrait d'absinthe*, but much of inferior quality is made with other herbs and essential oils, while adulterations are numerous and deleterious. In adulteration the green color is usually produced by turmeric and indigo; but blue vitriol has often been detected. In commerce are two kinds of A., common and Swiss, the latter prepared from highly concentrated spirits, and when genuine is most trustworthy as to herbs used. The chief place of manufacture is Neufchatel. It is mostly consumed in France, but large quantities are exported to the U. S. Absinthe was first used by the French soldiers in the Algerine war (1844-47), mixed in their liquor, as a febrifuge, and they brought the habit to France, where it has become so great an evil that its use is prohibited in both army and navy. Excessive use of A. gives at first a feeling of exhilarated intoxication; the digestive organs are immediately deranged; the appetite destroyed, then raging thirst, giddiness, ringing in the ears, hallucinations of sight and heavy mental oppression, anxiety, loss of brain power, and idiocy succeed each other rapidly. The moderate drinker soon feels muscular twitchings and loss of strength, his hair falls out, his countenance is mournful, and he becomes emaciated, wrinkled, and sallow; lesion of the brain, horrid dreams, gradual paralysis, and death follow in successive order. It is more deleterious and dangerous than brandy or any other strong spirits.

ABSOLUTE (*ante*). Hegel, Cousin, and others use absolute as self-existent or "being" in itself, which is the primitive in thought, the ultimate in science, and the object of immediate intuition; or the infinite, recognized solely as pure being. But the knowledge of an absolute has been held impossible, on the ground that knowing is in itself a relation between a subject and an object; what is known only in relation to a mind cannot be known as absolute. It is therefore said, of an absolute there is no knowledge: first, because to be known a thing must be consciously discriminated from other things; second, because it can be known only in relation with a knowing mind. Discussion of the absolute raises the controversy whether the pure, unconditioned absolute "being" held to by Cousin and some German specialists is real, living being or God, or only a logical abstraction. Gioberti maintains that as the terms used are abstract, the idea they evolve can be only a logical deduction by the mind operating upon its own conception, regardless of space, time, or conditions; that, therefore, the absolute is no real being, but a generalization of physical phenomena, and as far removed from the real and necessary being of the schoolman, from the real, living God, in whom men believe, as nothing is from being something. Kant, while denying the absolute or unconditioned, as an object of knowl-

edge, leaves it conceivable as an idea regulative of the mind's intellectual experience. It is against any such absolute—whether real or conceivable—that Sir William Hamilton and Rev. Henry Mansell have taken ground, the former in his review of Cousin's "Philosophy," and the latter in lectures on religious thought. This, however, is strongly controverted.

ABSORPTION (*ante*). All the membranes and tissues of living bodies have the property of absorbing fluids—a property that continues after death and until decomposition. In absorptions in animal organisms fluids do not penetrate tissues mechanically through orifices, for the existence of such orifices, or open mouths, once taken for granted, has been disproved by late microscopic research. It may therefore be surmised that absorption is equivalent to molecular combination of organs or tissues and fluids or things absorbed. Animal substances differ in absorbing power with difference in liquids, taking, for example, 100 parts of clear water and only 65 of brine, and less if the brine be stronger, and a tissue taking 100 parts of brine will not receive a quarter as much of an oily liquid. An idea of differences may be got from Chevreul's table:

100 Parts of	Absorb in 24 Hours.	Parts of Water.	Saline Solution.	Oil.
Cartilage.....	"	231	125	
Tendon.....	"	178	114	8.6
Elastic ligament.....	"	148	20	7.2
Cartilaginous ligament....	"	319		3.2
Cornea.....	"	461	370	9.1
Dried fibrine.....	"	301	154	

Activity of absorption varies with the freshness of the membrane, being most the soonest after separation from the principal parts, and varies also with pressure, motion, and temperature. *Absorption of oxygen* by the blood in the lungs is apparently instantaneous, the change in color from blue to red as soon as it arrives at the pulmonary vessels showing the action of the gas it has taken from the atmosphere. This rapidity of absorption is due to the diffusion of the blood in a great number of minute channels, whereby the vascular and absorbing surfaces are brought into contact over a large surface; and to the incessant motion of the fluid, by which its effects become perceptible at the earliest possible time. Claude Bernard found that if a solution of iodide of potassium were injected into the duct of the parotid gland on one side of a living animal, the saliva discharged by the corresponding gland on the other side almost instantly afterwards contained iodine. In a measureless instant, therefore, the iodine was taken up by the glandular membrane on one side, absorbed by the blood, carried to the heart, absorbed from the blood by the glandular membrane on the other side, and furnished to the saliva. It is by this process of absorption that the elements of nutrition are taken from the intestines and conveyed to the tissues they are to nourish; the bones absorb much calcareous matter from the blood, cartilages less, and muscles less still; the brain takes more water than does muscle, and muscle more than bone. Late medical schools agree that the action of drugs and poisons takes the same course. Opium dissolved by the liquids of the stomach is absorbed by the membranous lining, taken away by the blood and distributed well through the body; at the brain it is absorbed by the cerebral substance, acts upon the nervous matter, and produces narcotism or insensibility, and the brain, through its nervous ramifications, affects the whole body. The quickness of absorptive action is shown in using hypodermic injections; almost before the syringe has punctured the skin of the forearm a severe pain in the foot is sensibly relieved. *Absorption of Gases by Solids*.—Solid metals will sometimes absorb gases. Gaseous hydrogen has been found in newly-fallen meteorites, obtained perhaps while passing through nebulae. Palladium will take 643 times its own volume of hydrogen; silver and platinum absorb oxygen; titanium takes nitrogen; hydrogen will pass through platinum and red-hot iron like water through a sieve. Liquids rapidly absorb gases; water near the freezing point contains in volume 4 per cent of oxygen and 2 per cent of nitrogen, equal to 4 oxygen in 6 parts, while air has only 1 oxygen in 5 parts. At the temperature of 70° the power of absorption is reduced to one half, and at boiling nearly all absorbed gases are thrown off. Under low pressure less and under high pressure more gas can be taken in. Solutions of neutral salts absorb about the same amount as water, except sulphates; acids absorb least, dilute sulphuric taking less than a quarter of one per cent in volume. *Absorption of Heat*.—The capacity of substances for absorbing heat varies widely; it is least in smoothly polished or bright and light colored objects; greatest in dark colored and rough surfaces. It is found, in regard to color, that more depends on the coloring material than on the color itself. When the heat-giving body is non-luminous, color is without influence, but great in case of luminous bodies. There are also great differences in the absorbing power of transparent substances; rock-salt absorbs only 8 per cent of the heat passing through with the light, fluor spar 25 to 50 per cent, Iceland spar and glass 60 per cent, alum 90 per cent, and ice 94 per cent. These substances transmit the heat which they do not absorb. *Absorption of Light* is the process which takes place when light enters an imperfectly transparent medium, a portion of the light being stifled or spent in producing some physical effect, while the remainder is either directly transmitted or emerges after one or more internal reflections. A body absorbing all the light that reaches it would be perfectly black and wholly invisible; but in point of fact the blackest object reflects some light from its surface. A body absorbing none but reflecting all light would be perfectly white. In general the different

parts of white light are absorbed with unequal energy, and thus the light which escapes absorption is colored. In most cases the colors of natural bodies are occasioned in this way. Transparent substances absorb light in varying degrees, and in many of them an elective absorption takes place; glass, gems or liquids absorb certain colors and let others pass, those which pass determining the color of the substance. Occasionally a color complementary to one absorbed is reflected, as red rays transmitted from red aniline and green rays reflected. Certain crystals are polychromatic, showing changing colors as light passes through in different directions.

ABSTEMII, the name given to those who could not partake of the sacramental cup because of their natural aversion to wine. Calvinists allowed them to touch the cup with the lips without drinking, which Lutherans considered profanation. Later, and in America especially, there has been a division as to the propriety of using wine in the communion, the radical opposers of alcoholic drinks urging the use of the unfermented juice of the grape.

ABT, FRANZ, b. 1819, in Saxony. He began to study theology, but left it for music, and at 22 was musical director at Zürich; 11 years later, second musical director at the Brunswick court theatre, and promoted by the grand duke in 1855, to be first director. A. is a composer for piano, orchestra, and voice, but best known as a song writer, succeeding especially in two-part and four-part songs for male voices. He visited the U.S. in 1872.

A'BUL-FAZL, Vizier and historiographer of Akbar, the great Mongol emperor; b. about the middle of the 16th c. His work is *The Book of Akbar*, in two parts; the first part being a complete history of Akbar's reign, and the second an account of the religious and political constitution and administration of the empire. The style is excellent, and the second part is of unique and enduring interest. An English edition, now very rare, was published in 1783-6, and reprinted in London. A. d. by the hand of an assassin, while returning from a mission to the Deccan, in 1602.

A'BUL-GHA'ZI-BAHA'DUR, 1605-63; a khan of Khiva (of the race of Genghis-khan), who abdicated in favor of his son, and devoted his time to writing a history of the Mongols and Tartars, a valuable work, which has appeared in German, French and Russian.

A'BUL-KA'SIM. See ALBUCASIS, *ante*.

A'BU-TEMÂM', 806-46; an Arabic poet; b. in Syria; a prolific writer, and much praised. The Arabs said, "No man ever dies whose name has been praised in the verses of Abu-Temâm." He made three collections of Eastern poetry, one of which, the *Hamasa*, is praised by Sir Wm. Jones.

A'BÛ-YÛ'SÛF-YAKÛB', called AL-MANSÛR, or "The Victorious," 1160-98; the fourth sultan of the Almohade dynasty in Africa and Spain. His father was killed at the siege of Santaren, 1184; and as soon as he had quelled certain insurrections in Morocco, A. invaded Spain and carried off to Africa 40,000 captives. In a second foray he captured Torres and Silves, in Portugal; and, in a third venture, defeated the Christians under Alphonso III., near Valencia, and captured Madrid and four other important cities. He died in Morocco.

AB'YLA and CAL'PE. See HERCULES, PILLARS OF, *ante*.

ABYSS, used in Scripture to denote the ocean, or the under world, and for Hades, or the place of the dead, but indicating especially the place where sinful souls were imprisoned. In the A. were imprisoned the giants of old; and there the prophets tell us the kings of Egypt, Tyre and Babylon were punished for pride and cruelty. The A. was the place dreaded by evil spirits, and to which they begged the Saviour not to send them. A vast, boundless and chaotic region of darkness is common to most mythologies, and is called the A., or by some name of similar signification.

ACADEMUS, a hero of Athens, whose name is said to be perpetuated in "Academy" or "Academia," the grove in which Plato established his school. A. is recorded as having informed Castor and Pollux of the place where their sister Helen was hidden.

ACAJUTLA, a sea-port in San Salvador, on the Pacific, 12 m. s. of Sonsonati, once the only harbor between Acapulco and Realejo; now second in importance in its country, but still having a third of the foreign trade. Peruvian balsam, 20,000 lbs. annually, is the chief export.

ACANTHA'CEÆ, an order of monopetalous-exogenous plants, with didynamous flowers, known by an imbricated calyx in two broken whorls. The seeds grow from hooks on the placenta. Some of the A. have very beautiful flowers.

ACANTHASPIS, a genus of buckler-headed fishes in Ohio limestone, resembling *cephalaspis*; the buckler bears similar denticulated spines; the cranial plates are covered with verrucular ornamentation, and not firmly fastened together.

ACANTHOPHIS, a genus of serpents native to Australia, resembling the adder, but having a horny spine at the end of the tail. The genus includes the death-adder, one of the most venomous of reptiles.

ACANTHURUS CHIRURGEON, or **SEA-SURGEON**, named from a sharp-pointed, keen-edged and movable spine in the side of the tail, which cuts like a lancet. The scales are small; its food is vegetable; it is found on Atlantic coasts of tropical America.

ACASTUS, a son of Pelias, king of Iolcus; one of the Argonauts and of the Calydonian hunters. He revenged the murder of his father (killed by his daughters at the instigation of Medea) by driving Jason and Medea out of Iolcus.

ACCAD, a city of Babylonia. It has been identified with Nisibis. Rawlinson supposes Accad to be the name of the primitive Hamite race of that country.

ACCENT'OR, or **ACCENTOR MODULARIS**, a genus of warbling birds, including the hedge-sparrow; about $5\frac{1}{2}$ in. long, brown above and steel color beneath. The Alpine sparrow is larger.

ACCEPTANCE (*ante*), an agreement to pay a bill when legally due, applied usually to bills of exchange. There is no fixed time within which a bill must be presented for A., but usage prescribes as early a time as may be reasonably convenient, so that the acceptor may know when it becomes due. When a bill is drawn upon one's self, or by a partner in a firm upon that firm, or by an officer of a corporation upon such corporation, no A. is needed. When a bill is upon a firm, presentation for A. may be made to any of the partners; if to be accepted at a bank, it must be presented within the usual bank hours; or to a man of business at his place of business within the customary business hours. An A. may be either conditional, qualified, or complete; it may be in writing or oral, where no law to the contrary exists; it may be before or after the drawing, or after it is due; it may be by the maker of the bill, or by anybody who chooses to protect the paper. The common usage is to accept by writing on the bill itself the word "accepted," or more generally the mere signature of the acceptor suffices. The law of N. Y. requires A. in this form, and if the party refuses to sign his name the bill is subject to protest. Destroying a bill or refusing to return it within one day, whether accepted or not, is held to be equivalent to accepting. Where A. is given with conditions, the drawer of the bill should be apprised of and satisfied with such conditions. To prevent loose A. the statute of N. Y. requires that no one shall be charged as accepting unless his A. is in writing and signed by himself or his proper agent. It is also declared that a promise in writing to accept, although made before the bill is drawn, is in fact an A. in favor of any one who took such bill for value, on the faith of such promise in writing. It has been held that authority in writing or by telegraph to draw on a person is equivalent to that person's A. of the bills drawn; also that a letter of credit conferring authority on the holder to draw upon the author of the letter is equivalent to a promise in writing to accept the bills drawn. An A. is an admission of the signature of the drawer; so if the signature be forged, the acceptor is liable to the holder, presuming the latter to be innocent. Where A. is refused, the holder must satisfy the drawers and endorsers if he wishes to hold them, though failure to notify may not imperil the holder's action against them if it shall appear that no injury has been sustained by them in consequence of such failure; still the presumption is in their favor, and the burden of proof is on the holder. Foreign bills are protected in official form. This is not necessary in the case of home bills, unless where required by special statutes.

ACCESSORY (*ante*). An A. before the fact is one who participates in the act; an A. after the fact, one guilty of a crime of his own in which the principal properly had no share. Perpetrators in person of crime may be principals in first or second degree, one not present who counsels or procures a crime to be committed is accessory before the fact. If the instigator gave such advice in the presence of the actual offender, he would be himself a principal. In case of murder all present who aid or abet the killing are principals; but if two men fight to kill one another, and the bystanders, ignorant of such intent, join in and one is killed, they are not guilty of murder. But if one conspires with another to do a murder, and himself keeps watch against surprise or escape, the act of watching makes him a principal, for he is constructively present, though he may not see the deed done. If A tells B to whip C, and B does so, B is principal and A accessory before the fact. If A tells B to commit a crime, and B commits a different crime, A is not accessory in any way; but if B in trying to do A's request kills the wrong person, A would be accessory before the fact. Recent statutes provide that a person procuring a crime to be done shall be punished the same as the principal. In N. Y. the accessory before the fact may be tried and punished, though the principal may have been pardoned or discharged before conviction; and so, in Massachusetts, if the principal be not amenable. There, too, the aider and abettor, who in common law would have been a mere accessory, may be indicted and convicted of a felony without regard to indictment or conviction of the principal. Most of the states have similar statutes.—An accessory after the fact is one who, knowing the guilt of a felon, whether principal or accessory before the fact, receives, protects, or assists him; but it should probably be added, "with intent to hinder his trial, conviction, or punishment." Merely allowing a felon to escape, or ministering to his physical necessities, will not make one an accessory. Once the common law did not except any who aided in an escape unless a wife who aided her husband; but modern statutes are less rigid, or more liberally construed. In Massachusetts the statute excepts from criminal blame as accessory such relations as parent or

grandparent, child or grandchild, and brother or sister to the offender, and similar laws prevail in most of the states, at least in practice.

ACCIAJUOLI, DONATO, 1428-78; famous for learning in Greek and mathematics, and for services to Florence, his native state. After filling several important embassies, he became gonfalonier of Florence in 1473. Five years afterwards he died at Milan while on his way to Paris to ask the aid of Louis XI. on behalf of the Florentines against Pope Sixtus IV. He died poor, and his daughters were adopted by his fellow citizens. A. wrote commentaries on Aristotle's *Ethics* and *Politics*, and translated some of Plutarch's *Lives*. He also wrote the lives of Hannibal, Scipio, and Charlemagne.

ACCIDENT, in law, an unforeseen event, loss, act, or omission, not the result of negligence or misbehavior in any of the parties; such as the loss of negotiable or other papers; or where some part of a document has been omitted, in which case the court can require its insertion. In penalties and forfeitures, where the injury caused by omission of duty can be reasonably compensated, as in case of failure to pay rent on a given day, the court may relieve the offending party against the penalty of forfeiture. Where there has been neglect or omission through want of information or through negligence to defend a suit, the court may permit the proper steps to be taken. But as a rule a court will not interfere in favor of a mere volunteer; so if a seal should be omitted from a conveyance made without consideration, or a clause should be left out of a will, no relief would be extended. It is also ruled that no relief will be granted against a purchaser who has acquired legal rights in good faith for a consideration of value.

ACCLAMATION, an expression of opinion of any assembly by means of the voice. Among the Romans A. was varied both in form and purpose. At marriages the spectators would shout "Io Hymen," "Hymenæ," or "Talassio." A victorious army or leader was greeted with "Io triumphe." In the theater approbation for the play was asked by the actor speaking the closing words, who added "Plaudite." In the senate opinions were expressed and votes passed in such forms as "Omnes, omnes," "Æquum est," "Justum est," etc.; and the praises of the emperor were celebrated in certain prearranged sentences which seem to have been chanted by the whole body of senators. At first the A. which greeted the works of poets and authors recited in public was genuine; but the modern *claque* was early introduced by rich pretenders to literary ability who kept paid applauders not only for themselves but lent them to their friends. Nero gave a specimen when he caused 5000 soldiers at a given signal to chant his praises in the theater; the soldiers were called "augustals," and were conducted by a regular music-master. In the early times of the Christian church it was not uncommon for a congregation to express their approbation of a favorite preacher during the course of his sermon; and in this manner Chrysostom was frequently interrupted. In ecclesiastical councils voting by A. is very common, the question being usually put in the form "placet" or "non-placet." In other assemblies A. is expressed by "ay" or "agreed."

ACCOLTI, BENEDETTO, 1413-66; was secretary of the Florentine republic, and remarkable for powerful memory. From a book by him on the first crusade, Tasso got material for *Jerusalem Delivered*.

ACCOMACK, a co. in e. Virginia, on the Maryland border; 480 sq.m.; pop. '70, 29,409—7842 colored. The surface is level, and the soil moderately fertile, producing corn, oats, sweet potatoes, etc. Co. seat, Drummondtown, or Accomack court-house.

ACCORAMBO'NI, VITTORIA, an Italian woman remarkable for her beauty and her tragical history. She was sought in marriage by Paolo Giordana Orsini, duke of Bracciano, who was supposed to have murdered his wife Sabella de Medici; but A.'s father gave her to Francisco Peretti, nephew of cardinal Montalto. The husband was assassinated in 1581, and the widow fled from her father-in-law's house to that of the duke of Bracciano. Pope Gregory XIII. opposed her marriage to the duke so far as to keep her a prisoner in the castle of St. Angelo nearly a year, but that did not prevent their union. Not long afterward the duke died, leaving nearly the whole of his fortune to the widow. This so incensed Ludovico Orsini, a relative, that he caused the widow to be murdered in her home in Padua, Dec. 22, 1585.

ACCORSO, FRANCIS, 1182-1260; a lawyer of Florence, and professor and teacher at Bologna. He compiled in his work *The Great Gloss*, the substance of almost innumerable comments upon codes, digests, and institutes from previous writers. He disentangled with much skill the sense of many laws; but his ignorance of history and antiquities led him into many absurdities. His son Francis, also professor at Bologna, was invited to Oxford by Edward I. of England, and read lectures in the university in 1275-76.

ACCOUNT, a statement of receipts and disbursements; any statement of the condition of business, particularly with regard to financial affairs. In trade an A. current is one running or unsettled. Statements of A. are made at any time desirable, or at stated times, or on request, or demand. There is an action in law, seldom used, to compel the rendering of an A. by officers required to do so but neglecting the duty. In actions for A. both parties may be plaintiffs or defendants.

AC'CRA, or **ACRA**, part of West African gold coast, under the rule of England. Fort St. James, lat. $5^{\circ} 32'$ n., long. $0^{\circ} 12'$ w., governs a small territory with a population of about 3000 blacks. Crevecœur, an old Dutch settlement, a mile east, was destroyed by the English in 1782, rebuilt in 1872 and ceded to England. The climate is salubrious.

ACCUBA'TION, the posture of Greeks and Romans at table. Their low tables were surrounded by couches on each of which usually three persons reclined, lying on the left side, the elbow or head on a pillow, the feet behind the next person. The middle was held to be the place of honor. Roman women deemed the position immodest, but finally adopted it; children and persons of mean condition were not permitted the custom.

ACCUMULATION OF POWER, the quantity of motion in machines at the end of given intervals, during which velocity has been constantly accelerated. A simple case is the rammer of a pile-driving machine, which descends by force of gravity in a certain time and falls upon some object. If the object does not move, the velocities of all the particles in the hammer, which had gone on increasing during the descent, are destroyed, and thus a shock is produced immensely greater than that which would result from the mere pressure of the hammer. The effect is directly proportional to the mass in motion, and to the square of the velocity at the instant of impact.

ACEL'DAMA, a potter's field or working-place; said to have been bought by the Jewish priests with the money received by Judas for betraying Christ; afterwards set apart as a burial-place for strangers dying in Jerusalem. It is there shown, on the slope of the hills beyond the valley of Hinnom, s. of mount Zion.

ACEPH'ALOCYST, a cyst without a head, a hydatid growth, found in the liver, kidney or other abdominal organ of man, and sometimes of lower animals. It is a globular sac with walls of condensed albuminous substance and laminated texture; in its cavity is a colorless fluid with albuminous and gelatinous ingredients. Sometimes many secondary cysts grow from a main one. They are of parasitic nature, of the class of cestoids, of which the tape-worm is a familiar representative.

AC'ETATES, compounds in which acetic acids are principal ingredients; generally soluble in alcohol and water, and some are deliquescent; the least soluble are acetates of mercury, silver, molybdenum, and tungsten. There are other classes of salts, neutral, active, and basic, all destroyed at red heat or by sulphuric acid, the latter liberating acetic acid, easily recognized by its pungent odor. Heated with sulphuric acid and alcohol they produce acetic ether; with lime, acetone, which has a peculiar odor; distilled with caustic potash, they yield marsh gas. Their solutions yield a deep yellow color with ferric chloride, not given by free acetic acid. Acetates are much used in medicines and the arts; potassic acetate is prescribed for a diuretic; ammoniac acetate as a diaphoretic; plumbic acetate (sugar of lead) is an astringent. Acetates of aluminium, manganese, iron and zinc are used in calico-printing; acetate of copper (verdigris) mixed with arsenite of copper is used in wall-paper.

ACETYLENE, a colorless gas of disagreeable odor, perceived where coal-gas is not perfectly burned. It burns with a bright, smoky flame, and has been made by running marsh-gas through red-hot tubes. In copper pipes for coal-gas, acetylene deposits a dark red copper compound, which explodes with violence at a blow or under heat. Mixed with chlorine, it explodes spontaneously.

ACHÆ'ANS, one of the four races of ancient Greece, and a name often given by Homer to all Greeks. The A. inhabited parts of Thessaly, Argos, and Sparta, in the Peloponessus, whence they were expelled by the Dorians. Their government was democratic, and they preserved liberty until the time of Philip and Alexander, but were afterwards subject to the Macedonians, or oppressed by domestic tyrants. In mythology, their ancestor was Achæus, son of Xuthos and grandson of Hellen.

ACHÆM'ENES, ancestor and founder of the family of Achæmenides, from the time of Cyrus the royal house of Persia.

ACHÆM'ENES, son of Darius and brother of Xerxes, who made him satrap of Egypt, 484 B.C. He fell in 460, in an attempt to quell a revolt of Libyan chiefs.

ACHARD, LOUIS, AMÉDÉ EUGÈNE, 1814-75; b. Marseilles. He began life as a merchant; became a Parisian journalist and royalist writer; accompanied the duke of Montpensier to Spain. In 1847 he published *Belle Rose*, a successful novel; later, *Miss Tenipète*, *Histoire d'un Homme*, *Le Clos-Pommier*, *L'eau qui Dort*, *La Misère d'un Millionnaire*, and *Madame de Sareus*. He was an officer of the legion of honor.

ACHA'TES, friend and companion of Æneas in his wanderings after the fall of Troy. His faithfulness to the Trojan chief originated the saying, "Fidus Achates," applied to any faithful friend, though not properly to an equal in position.

ACHA'TES, a river in southern Sicily, now the Dirillo. Pliny says agates were first found there, whence their name, from that of the river.

ACHEEN', or **ACHIN**, a small kingdom in n.w. Sumatra, the only part of the island that has always resisted the Dutch; area about 16,500 sq.m., pop. est. from 50,000 to 330,000. The interior, never explored, is believed to be inhabited by tribes kindred

with the Battas, a race of anthropophagi, adjoining on the south. On the e. coast are fertile plains, and in the interior high mountain ridges. Rice, pepper, cotton and tropical fruits are the chief productions. Horned cattle, horses and goats are plenty and of fine breeds. What religion there is, is Moslem; the inhabitants are divided into Achenese, Pedeerese, and Malays. The sultan is nominally the supreme power, but the real governor is his appointee, the shahbander. There are two chiefs in each of the three subdivisions, whose offices are hereditary. The sultan must consult these six chiefs in any movement of importance, and they consult with chiefs of the second grade before giving decision. The six chiefs elect a new sultan from the reigning family, and may depose him for acts against their idea of public welfare. Each village has a chief, in large towns called rajah, who advises with the chief members of the community on important questions, and reports to his superior. The sultan's income is five per cent of the value of goods imported to Acheen (the capital), but he gets only such as the six chiefs or the shahbander may give him. Acheen was visited by the Portuguese in 1505, the Dutch in 1595, and English in 1612. In 1659 the East India co. established a factory at the capital. England kept a protectorate over Acheen until 1824, when it was transferred to Holland. In 1873 there was a rebellion against the Dutch, but the next year their capture of the capital ended it. The capital is the city of ACHEEN, 5° 35' n., 95° 19' e., near the n.w. point of Sumatra, on a river a mile from the ocean. Like most Malay towns, it is of timber and thatch, and the houses are scattered and poor. It was once a much larger town; at present it is important only as the residence of the sultan.

A'CHENBACH, ANDREAS, b. Cassel, 1815; a German landscape and marine painter. He studied under Schadow; was made a royal academician of Berlin, and hon. member in Philadelphia and other cities; is a knight of the legion of honor, and took a medal of the first class in Paris in 1855.

A'CHENBACH, OSWALD, b. Dusseldorf, 1827, brother of Andreas, a painter after the style of the former.

A'CHENWALL, GOTTFRIED, 1719-72, a chief promoter of the science of statistics. He studied at Jena and Leipsic; lectured at Marburg university on law, history and social science; and held a chair in the new university of Gottingen till his death. Though not the originator of the science of statistics, he was the first to formulate and define its purpose. Achenwall, it has been said, "defined politics as the theory of what a state ought to be; statistics the account of what it really is; and history the relation of how it became what it is." His wife, Sophie Elenore Walther, a rarely educated woman, wrote poems and essays.

ACHERON'TIA, or DEATH'S-HEAD MOTIL, a genus of lepidopterous insects; belonging to the family *sphinxidae*. There is a species in Europe (*acherontia atropos*) having on the back of the thorax a singular representation of a human skull; hence the name. It is a beautiful insect, 4½ in. long and 5 to 5½ in. expanse of wings, and if disturbed or handled it makes a squeaking noise. The ignorant and superstitious believe it to be a forerunner of evil. It drives bees from their hives and eats their honey, taking no hurt from stings. It is seen most frequently mornings and evenings in autumn. Its larva is a fat caterpillar 5 in. long, greenish-yellow, and beautifully marked on the back with blue and white lines and black spots.

ACHILLES TATIUS, an astronomer of the first part of the 4th c., who wrote a treatise on the sphere. There is a fragment of his writings extant, entitled *An Introduction to the Phenomena of Aratus*.

ACHILLES TATIUS, a native of Alexandria, who lived about the end of the 5th c., and wrote the *History of Leucippe and Clitophon*.

ACHILLI, GIOVANNI GIACINTO, b. Viterbo, 1803; a Dominican friar who left the Roman Catholic church in 1839 and published the New Testament in Italian, which is regarded as the best in that language. He went to England in 1850, brought suit for libel against Dr. Newman and got a verdict. He has been professor of Italian language and literature in the English college at Malta.

ACHILLINI, ALEXANDER, 1463-1512; a Bolognese lecturer in medicine and philosophy, by some called the "Second Aristotle." He and Mundinus were the first dissectors of dead human bodies. A. was the author of several works, chiefly on anatomy.

ACHMIN. See EKHMIM, *ante*.

ACILIUS GLABRIO, MANIUS, a Roman general and consul 191 B.C. From plebeian origin he rose to the highest places; supplanted Cornelius Scipio; commanded as consul against Antiochus the great in Syria, defeated him at Thermopylae, and subsequently waged successful war against the Æolians, receiving a triumph on return to Rome. He wrote the annals of Rome in Greek, and was the first man to whom a golden statue was erected in Italy.

ACIS, the son of Taurus and Symæthus, beloved by Galatea. Being jealous of him, Polyphemes the cyclop crushed him under a rock, and his blood gushing forth was changed into the river Acis, or Acinum, at the foot of Mt. Etna.

ACK'ERMANN, CONRAD ERNST, b. 1710, d. Hamburg, 1771; a comedian and one of the founders of the German stage. He first acted in 1740; gathered a company

traveled through the country, and established the celebrated Hamburg theater, whose performances inspired Lessing to write his comments on dramatic art.

ACKERMANN, SOPHIE CHARLOTTE, wife of Conrad Ernst, and before that widow of Schröder the organist; distinguished as an actress and histrionic teacher, but more famous as the mother of Treder.

ACLAND, HENRY WENTWORTH, a nephew of John Dyke, a physician and promoter of sanitary reform; accompanied the Prince of Wales to America in 1860 as his medical attendant.

ACLAND, JOHN DYKE, an English officer in the American revolution, commanding grenadiers at the battle of Stillwater, Oct. 7, 1777. He was shot in the head by a storming party under Arnold. His wife was Harriet, daughter of the Earl of Rochester, and showed great heroism in forcing her way to him after the fight. She wrote an account of the campaign. In 1778 Acland returned to England, where he resented remarks disparaging to Americans by lieut. Lynch, who challenged and killed him. His wife was insane for two months afterwards.

ACLINIC LINE an imaginary line around the earth between the tropics, where the needle has no declination. It is called the magnetic equator, and is about 70° from the magnetic poles. The line is variable and irregular; in the western hemisphere it is s. and in the eastern n. of the geographical equator.

ACÆMATÆ, a class of Greek monks called watchers, who chanted service continuously day and night, dividing like sailors into three watches. They originated in the 5th c., near Constantinople, and established many monasteries. Some were denounced for favoring Nestorianism.

ACO'MA, a village in New Mexico, the Acuna of Spanish historians; $35^{\circ} 24' \text{ n.}$, $106^{\circ} 10' \text{ w.}$; an old Indian t. built on a rock 400 feet high and reached only by spiral stairs cut in the stone. It has a church and missionary station.

ACONCA'GUA, a province of central Chili; 6000 sq.m.; pop. '68, 130,672. In the e. part are the Andes, with fertile valleys and many rivers running to the Pacific: there are copper, silver and gold mines. The w. part is artificially irrigated, and produces large crops of cereals and superior hemp. Rain is scarce, and natural vegetation light. The province is divided into four departments: Andes, Ligna, Petora and San Felipe. Capital, San Felipe d'Aconcagua, at the foot of the Andes, 55 m. n.e. from Valparaiso; pop. 7000.

ACONCA'GUA, the highest known mountain peak in the western hemisphere, n.e. of San Felipe, $32^{\circ} 39' \text{ s.}$, 70° w. The latest measure makes the height 6834 metres, or 22,422 ft. (4.245 m.), 997 ft. higher than Chimborazo. The cone is an angular, serrated mass, bare of vegetation, and without sign of volcanic action. It is a grand sight from Valparaiso.

AC'ONITE, WINTER, an herbaceous, tuberous plant, without stem, bearing in early spring bright yellow cup-shaped flowers; leaves smooth, pale green, and peltate; scape low and single flowered.

ACOSTA, JOAQUIN, a col. of engineers, geographer and historian; in the Columbian army in 1831; in 1834, with Céspedes the botanist, undertook a scientific expedition from the valley of the Socorro to that of the Magdalena, and seven years later visited the country from Antiocha to Anserma; went to Spain, where he lived several years. His chief work is *The Discovery and Colonization of New Granada*. He also made a map of that republic, and furnished essays to the Paris geographical society.

ACOSTA, JOSE D'; b. 1539, d. 1600; was educated a Jesuit and made professor of theology; was sent missionary to South America, and on return was superior of Valladolid and rector of the university of Salamanca, where he died. His work, *The Natural History of the Indies*, is high authority, and known in many languages.

ACOSTA, URIEL D' (see ACOSTA, GABRIEL, *ante*), a Portuguese nobleman, educated in the Roman Catholic church. He changed his name from Gabriel on adopting the Jewish faith. Doubt attaches to the story of his suicide.

ACOUSTICS (*ante*). The velocity of sound has been determined by ascertaining the time intervening between the flash and report of a gun, as observed at a given distance, and dividing the distance by the time. After many experiments in various countries, Van der Kolk assigned 1091 ft. 8 in. per second, with a probable error of 3.7 ft. as the velocity of sound in dry air at 32° Fahr. More recent experiments by the astronomer royal at the cape of Good Hope, give 1096 ft. To this velocity may be added 1.11 ft. for each degree Fahr. But air is not a perfect gas, and the variations of elastic force caused by a wave of sound passing through it are not uniform; so these measures, though approximately, may not be absolutely, correct. Furthermore, the rapidity of transmission depends upon the loudness of the sound; and capt. Parry found, in the polar regions, that the discharge of a cannon at a distance of $2\frac{1}{2}$ m. was heard perceptibly sooner than the word ordering to fire, which, of course, preceded the discharge. There is also a gradual falling off in the speed of sound; and Regnault determined that a sound decreased in speed by 2.2 ft. per second in passing from a distance of 4000 ft. to

one of 7500 ft. He also found that the velocity depended upon the pitch, the lower notes traveling faster than the higher ones; thus, the fundamental note of a trumpet travels faster than its harmonies. Sound travels faster in liquids than in air, and faster in solids than in liquids. In the river Seine, at 59° Fahr. the speed was 4714 ft per second. Through iron, sound travels ten and a half times faster than through air. Experiments on telegraph wire produce almost identical results. Different metals transmit sound in widely different degrees. Wertheim assigned 16,822 for iron and 4030 for lead, at a temperature of 68° Fahr. Except in a few cases, the loudness of a sound is less as the distance increases between the source of the sound and the ear. In an unlimited and uniform medium, the loudness of the sound proceeding from a very small sounding body varies inversely as the square of the distance. But to verify this fact it would be necessary to make a test at a considerable elevation above the earth's surface, the ear and source of sound being separated by air of constant density. As the density of the air diminishes, it would be found that the loudness of a sound at a given distance would decrease. The decay of sound due to this cause is observable in the rarefied air of high mountain regions. De Saussure found that the report of a pistol at a great elevation appeared no louder than would a small cracker at a lower level. But it must be stated that when air-strata of different densities are interposed between the sound and the ear placed at a given distance, the intensity depends only on the density of the air at the source itself: whence it follows that sounds proceeding from the surface of the earth may be heard at equal distances as distinctly by a person in a floating balloon as by one situated on the surface itself; whereas any noise originating in the balloon would be heard at the surface as faintly as if the ear were placed in the rarefied air on a level with the balloon. This was exemplified by Glashier, the aeronaut, who, at an elevation of 20,000 ft. heard with great distinctness the whistle of a locomotive passing beneath him. The prolonged roll of thunder, with its manifold varieties, is partly to be ascribed to the reflection of the sound by mountains, clouds, etc., but is mainly due to the comparatively low rate of transmission through air. The explanation will be more easily understood by noting the case of a volley fired by a long line of troops. A person at a given point in the line would hear the sound of the nearest musket first, and of the others in the order of distance, and the effect would be a prolonged roll, concluded by the musket most remote from the hearer, though all were fired at the same instant; and the roll would gradually decrease in loudness. If he stood exactly opposite the centre of the line, the reports from either end would reach him simultaneously and the effect would be more nearly a loud crash. If the soldiers formed a circle, the listener in the centre would hear a single explosion, since the report of every gun would reach his ear at the same instant, and the whole explosion would be equal to that of the sum of all the separate discharges. By varying the form of arranging the troops, corresponding variations in the sound would be produced. Keep in view, then, the fact that flashes of lightning may be regarded as representing lines of troops, at the points and along the ranks of which explosions are generated at the same instant of time; then consider the variety of distance and position relative to the electric discharge of the listener, and we find no difficulty in accounting for the rolling peals of thunder. In a mountainous region this rolling is greatly augmented by reverberations or echoes from the steep declivities.

ACQUAVIVA, CLAUDIO D', a general of the Jesuits; b. in Italy; he regulated the studies of the order, and prohibited the discussion of tyrannicide. His *Ratio Studiorum* is still considered authority.

ACRELIUS, ISRAEL, 1714-1800, b. in Sweden; studied at Upsal; was ordained in 1743; appointed provost of the Swedish congregation on the Delaware; came to America and was pastor of the church at Christiansa. After several years he returned to Sweden, and received a pension and a church living. He wrote a description of the Swedish settlements in America.

ACROCERAUNIA, in ancient geography a promontory in the n.w. of Epirus, terminating in Montes Ceraunii; now cape Linqueeta; lat. 40° 25' n. The frequent striking of lightning at or near the mountain gave the name, which is equivalent to "thunderbolt peak."

ACRO CORINTHIUS, a steep hill of 2000 ft., near Corinth; the site of the Acropolis or citadel, and commanding a beautiful view.

ACRON, a physician of Sicily in the 5th c. B.C., who is said to have originated the practice of stopping pestilence by purifying the air with large fires, though this is doubtful. He wrote several works on medical subjects, but none of them are extant.

ACTA ERUDITORUM, the first literary serial in Germany; was begun 1628 by Otto Mencke, professor in Leipsic university, published monthly in Latin, and kept in the founder's family until 1754, when change of management and neglect reduced its circulation and reputation. The last volume, completing the record of science to the close of 1776, appeared in 1782. The whole set is in 117 vols, 4to. There have been many imitations in various countries.

ACTIAN GAMES. See **ACTUM**, *ante*.

ACTINOMETER, an instrument to measure the heat of the sun's rays; at first a common thermometer, the bulb blackened with nitrate of silver; then one with a large bulb filled with blue solution of ammonia and sulphate of copper, inclosed in a box with a plate-glass top, the expansion of the liquid to indicate the amount of heat. Prof. John W. Draper of N. Y. next discovered that equal volumes of chlorine and hydrogen form chlor-hydric acid in direct proportion to the actinic intensity of the light and the time of exposure. Subsequently Bunsen and Roscoe hit upon the same plan. There are other actinic reactions; as, in a solution of chloride of gold and oxalic acid, the gold precipitates on exposure to actinic rays.

ACTION (*ante*) in law. No action can be maintained by a citizen against a government without the government's express consent; except in rare special cases no suit can be brought by a citizen against the U. S.; relief must be sought by petition, or in the court of claims. State courts do not ordinarily contest acts of foreign states or sovereigns for anything done or omitted in their public character. Here negotiation takes the place of suit. Modern statutes have much simplified proceedings under this title, and many old forms have been abandoned. In N. Y. an effort has been made to avoid all distinctive forms; there every other than a criminal is a civil action, having no other specific name; the design of the code being to give by this action every kind of relief which can be sought in civil causes.

ACTON, Sir JOHN FRANCIS EDWARD, 1736-1811. He was a native of Besançon, son of Edward Acton, a physician. He served in the French and Tuscan navies, commanding a frigate in the expedition against Algiers in 1774. For gallantry in rescuing some thousands of Spanish soldiers from slavery he was promoted, becoming commander-in-chief of the Neapolitan sea and land forces; next, minister of finance, and finally prime minister. When the French entered Naples in 1806 he fled to Sicily, where he died. His second son, Charles Jannarius Edward, was made cardinal Santa Maria Della Pace in 1842. (See *ante* for ACTON, JOSEPH, PRINCE; where is intended the same person as the commander-in-chief here mentioned. There is doubt about his responsibility for the ill treatment of political prisoners.)

ACTON BURNELL, a statute of Edward I., so called because passed when parliament was sitting at a Shropshire village of the name, Oct. 12, 1283. It was the first law to enable merchants to collect debts by seizure of property and imprisonment. Jews were excluded from its benefits, it being designed to encourage foreign Christian merchants to settle in England. A similar law was passed in France 253 years later.

ACTS OF THE APOSTLES (*ante*), the name, generally, and, from a very early period, given to the fifth book of the New Testament, which is often quoted by the early Christian writers, and always as the work of Luke the evangelist. The introduction to it connects it with the third gospel as written by the same author and addressed to the same person. That both were from the same hand is also to be inferred from the similarity of style, idiom, and diction. In modern times some writers have attempted a criticism invalidating both the external testimony on this point and the internal probabilities and proofs. A single specimen may be given of the reasoning on which they rely for dislodging this book from its place in scripture, or at least for lowering the estimation in which it is held. "According to the gospel ascribed to Luke, all the events related of Jesus after the resurrection took place, or seem to have taken place, on the day of the resurrection, or they may possibly have extended into the next morning, but certainly not later. The A. on the contrary states that Jesus was seen by the disciples for forty days after the resurrection." This is a summary way of developing a contradiction where none exists. The account of these events in Luke's gospel is indeed brief and condensed, but it does not assert or imply that they all took place at once. Points in the narrative fairly admit, and rationally require, the supposition of intervals of time. The other gospels, also, declare or imply such intervals. The accounts of Matthew and Mark are more condensed than even Luke's. John's is much more extended. It marks off expressly several intervals, and says that one of them was a week long. All these accounts, therefore, taken together, prepare the way for the statement in the A. that the whole time between the resurrection and the ascension amounted to 40 days. The Greek title, it will be observed, does not indicate that the book contains a complete history of the apostles of Christ in their work of proclaiming the gospel. It is not "the acts" (which indeed the English translation does make it), as if all were intended, but "acts" as only a part. This is in strict accordance with the contents. In the opening of the book, the names of the eleven apostles and of the twelfth (chosen to fill the place of Judas) having been given, the actions and words of Peter at once become prominent; then Peter and John are mentioned together, and soon Peter's course only is given. After 12 chapters, of which the larger part of one relates to Paul's conversion, the rest of the book is filled chiefly with this last apostle's work and things connected with it. Jerusalem, the church, and the apostles there, scarcely appear except as connected with Paul.

The contents of the book may be noted as follows:

I. *An exhibition of the ever-present, controlling, and administrative agency of the Lord Jesus*, from his exalted sphere at the right hand of God, putting forth the powers of his risen life and giving organization to his spiritual and everlasting kingdom. We have

his commands to the apostles, his direction of the choice of Judas's successor, his sending down the holy spirit, his turning men from their sins and adding them to his church, his working of miracles by the instrumentality of the apostles, his sending Peter to open the door of faith to the Gentiles and Philip to guide the Ethiopian in his effort to understand the scripture, his delivering Peter from prison and Paul from his mad career.

II. *A record of the gift and operations of the Holy Spirit.* The Saviour at the close of his work on earth promised that he would send from the Father the spirit of truth to abide with his disciples, to reveal the truth to them and to convince the world of sin, righteousness, and judgment. The A. records the fulfillment of the promise and exhibits the work of the holy spirit in the minds and hearts of men of various nations. It thus becomes the connecting link between the gospels and the epistles which describe the spirit's progressive work.

III. *The account of the planting and spread of the Christian church.* It records the names of the apostles, the number of the original company at Jerusalem, and the beginning of the church there. It shows that the life of Jesus was appealed to among those who had witnessed it; that his messiahship was defended in the hearing of those who had crucified him for asserting it; that the divine appointment of his death was proclaimed in the midst of those who had inflicted it as a malefactor's doom; that his resurrection was affirmed in the face of those who had buried him and exercised official guardianship over his grave; that the first adherents to his religion were gained among the crucifiers themselves, including priests as well as the people; that the faith in him spread immediately among Jews and proselytes, then in Jerusalem, who belonged to the chief countries of the Roman empire, and to some beyond its bounds; and that, the Gentiles being speedily admitted by divine command to the full blessings of salvation, the church was rapidly extended into Judea, Samaria, Phenice, Cyprus, Syria, Asia Minor, Illyria, and Italy.

IV. *Conclusive evidence of the divine origin of Christianity.* It shows that, advancing from a very small beginning, by the instrumentality of unarmed men, opposed by the power of the Roman empire; of private persons, opposed by the authority of the Jewish and pagan priesthods; of unlettered men, opposed by all the culture of the times, it prevailed over the mightiest institutions, the most formidable barriers, the most malignant persecutions, and prevailed by the power of God. When the historian Gibbon was investigating the decline and fall of the Roman empire he found that "an inquiry into the progress and establishment of Christianity constituted an essential part of the history of the Roman empire." "While that great body," he says, "was invaded by open violence or undermined by slow decay, a pure and humble religion gently insinuated itself into the minds of men, grew up in silence and obscurity, derived new vigor from opposition, and finally erected the triumphant banner of the cross on the ruins of the capitol." His curiosity having been awakened "to inquire by what means the Christian faith obtained so remarkable a victory over the established religions of the earth," he ventures to give what he calls five secondary causes of the rapid growth of the Christian church. All these are *vital portions of Christianity*, and, as stated by him, they are seen to amount to this, that it was the prevalence of Christianity that promoted the triumph of Christianity, as a great conflagration is promoted by the spreading of the flames. The book of A. supplies the necessary beginning to Gibbon's account by showing how the fire was kindled, how the essential elements of Christianity were produced. His causes are: 1. "*The zeal of the Christians*;" and the A. informs us how the Christians came into existence and how their zeal was first produced and then "purified." 2. "*The doctrine of a future life*;" and the A. declares the source whence the doctrine was obtained and "improved." 3. "*The miraculous powers ascribed to the primitive church*;" and the A. explains how the primitive church began, and on what evidence the miraculous powers were so ascribed to it as to secure its triumph. 4. "*The pure and austere morals of the Christians*;" and the A. reveals how their morals came to be pure and austere, in the midst of an abounding corruption too horrible to be looked upon, and nowhere more fully revealed than in Gibbon's own work. 5. "*The union and discipline of the Christian republic*;" and the A. demonstrates how the church came to be "*a republic in the midst of the empire*," in what its "union" consisted, how its "discipline" was maintained, and by what power "it became an independent and increasing state."

V. *The close of Scripture history in relation to the Jews.* In the great interest awakened by the book as recording the first preaching to the Gentiles, comparatively little notice is taken of the fact that it records also the last preaching to the Jews. The book opens with the preaching of the gospel to the Jews, the acceptance of it by some of them, and the bitter opposition made to it by the rest which at length drove away a large part of the Christians from Jerusalem and in a great degree brought the preaching to the Jews there to an end. When Paul came there after his conversion he began to preach zealously to the Jews, but they would not receive his word, and he was commanded by the Lord to leave the city. At Antioch, in Pisidia, he preached earnestly to Jews and Gentiles, but when the former contradicted and blasphemed he turned, by divine command, to the latter. A similar result was witnessed in Iconium, Lystra, Thessalonica, Berea, Corinth, and Ephesus. When, late in life, he went again to Jerusalem, as it proved for the last time, the opposition of the Jews was more furious than before,

and after a narrow escape from death at their hands and an imprisonment, continuing more than two years, through their instrumentality, he was constrained to appeal unto Cæsar. Three days after his arrival at Rome he sent for the resident Jews, and had a day appointed for making known the gospel to them, on which, from morning to evening, he expounded, testified, and persuaded concerning Jesus out of the law and the prophets. The result then was that some believed and others believed not; and again Paul turned to the Gentiles. With this narrative the A. ends, abruptly, as many say, with respect to Paul and the gospel, but appropriately with respect to the Jews. If no reason can be shown why Christian history should here be cut short, certainly it was necessary that Jewish history should here come to an end. For, in a little while after Paul's imprisonment at Rome, Jerusalem was destroyed and the Jews were scattered abroad. And thus the A. completes the unity of the historical books of scripture whose constant and ultimate, though not always direct, reference is to the Jews.

ACTS, SPURIOUS OR APOCRYPHAL, treatises or sentences purporting to have been written by or concerning Christ, the apostles and other disciples. Many of these are now known only through the statements of ancient authors. Others are extant. I. One class profess to be words of Christ, and are supposed by some writers to have been derived from early accounts concerning him, of which many had been written before the gospel of Luke (i. 1). Some of them, in all probability, were merely inaccurate quotations from the genuine gospels; others have no external testimony to establish their genuineness and no merit to make them worthy of regard. The beautiful words, not recorded in the gospels, which Paul quoted to the Ephesians as words of Christ, "It is more blessed to give than to receive," are not properly included in the class now described, for they are vouched for as genuine words of Christ, by an inspired apostle who had many ways of learning the truth about them, and have always had a place in an undisputed book of the New Testament. II. Many spurious treatises called *Acts of the Apostles* were written at now unknown dates. Of some of these little more is known than that they once existed; of others fragments remain, and several are extant entire. A selection was printed at London in 1821 under the title, *Apocryphal New Testament*. They abound in fabulous, puerile, and visionary statements which are unworthy of notice. III. Among the treatises of this general class, the A. of Pilate deserves to be singled out as probably genuine and valuable. It is well known that accounts of all important events that occurred at Rome were carefully preserved either in the *Acts of the Senate* or the *Daily Acts of the People*. In like manner it was the duty of the governors of provinces to send to the senate or the emperor reports of their administration, including accounts of the remarkable transactions that occurred in their region. These were called the "acts" of their government, and were not published for general perusal, but deposited among the archives of the empire, as are state papers now, for information to historians. There is every reason to believe that Pilate sent such a report of his administration to Rome, and that it included an account of Jesus who was called Christ. And it is certain that the primitive Christians, in defending their faith, appealed to these A. of Pilate as to testimony which could not be denied. Justin Martyr, in his first defense of the Christians, presented, 140 A.D., to the emperor and senate, having mentioned the crucifixion of Jesus and some of the events connected with it, says: "That these things were so done, you may know from the acts made in the time of Pontius Pilate." And again, having recounted some of the miracles of Jesus, such as healing diseases and raising the dead, he adds: "And that these things were done by him you may know from the acts made in the time of Pontius Pilate." Tertullian, also, in his defense of Christianity, 200 A.D., says: "Of all these things relating to Christ, Pilate himself sent an account to Tiberius, then emperor."

ADA, a co. in s.w. Idaho, on Snake river, near the Oregon border; organized in 1864; 2800 sq.m.; pop. '70, 2675. Mining is the principal business. Co. seat, Boise city, which is the capital of the territory.

ADAIR', a co. in s.w. Iowa, on the head streams of Nodaway river; 576 sq.m.; pop. '80, 11,350. The surface is mostly level; the chief productions are agricultural. Co. seat, Fontanelle.

ADAIR', a co. in s. Kentucky; 450 sq.m.; pop. '70, 11,065—1836 colored. The surface is hilly, with good timber and fertile soil; there is plenty of water power, with several factories; chief products, corn and tobacco. Co. seat, Columbia.

ADAIR', a co. in n.e. Missouri, on Chariton river; 570 sq.m.; pop. '80, 15,176—143 colored. The chief products are corn and tobacco. Co. seat, Kirksville.

ADAIR', Sir ROBERT, 1763—1855; b. in London; son of a surgeon-gen. to George III. and a relative of Charles James Fox. He entered parliament in 1802 as a whig; in 1806 Fox sent him to Vienna, and in 1808 Canning sent him on a special mission to Turkey, where he concluded the treaty of the Dardanelles. He remained English representative in Turkey until 1811. In 1831 he was sent to the new kingdom of Belgium, and was prominent in later peace negotiations. In 1835 he retired with the rank of privy councillor. At the age of 82 he wrote memoirs of his residence at Vienna and elsewhere abroad.

ADALBERT, a French bishop and missionary to the German heathen, about the middle of the 8th c. St. Boniface charged him with heresy in giving his own hair and nails as relics, and he was condemned to execution, but died in prison. His few disciples were called Adalbertines.

ADALBERT, SAINT, d. 997, "the apostle of the Prussians." He was educated at Magdeburg; in 983 chosen bishop of Prague; failing to convert the Bohemians, he retired to a monastery near Rome; went back in 993, but again retired in discouragement; in 995 he baptized the future St. Stephen, the first king of the Hungarians; at last went as a missionary to Poland and Prussia, and was murdered by the natives.

ADALBERT, d. 1072. He was made archbishop of Bremen in 1043 by Henry III., whom he accompanied to Rome, where he became a candidate for the papacy, barely missing the election. Leo X. made him his legate in the north. During the minority of Henry IV., A. and archbishop Hanna of Cologne usurped the administration of the empire, but he became obnoxious to the princes, and they succeeded in separating him from the emperor; however, he soon after regained his influence and kept it as long as he lived.

ADALBERT, HEINRICH WILHELM, 1811-73; b. Berlin; prince, and cousin of the emperor of Germany. He went into the artillery service in the army of Prussia when young, but having a taste for travel he visited most of the countries of Europe, and crossed the ocean to Brazil. In 1848 he was charged with organizing the German navy, and made admiral. In 1856 he made a voyage in the Mediterranean, and was slightly wounded in a fight with pirates off Morocco. He became commander of the marine of Prussia, and when the German empire was established was continued inspector-gen. of the new marine. He was under medium height and in no way conspicuous, unless for carelessness in dress; but he was sharp withal, and jovial. In 1851 he made a morganatic marriage with baroness von Barmin (Thérèse, the dancer, and sister of Fanny Ellsler). They had a son, who died while an infant.

ADAM, ADOLPHE CHARLES, 1803-56; b. Paris; composer. In 1817 he entered the conservatory, and studied composition under Boieldieu; began writing piano fantasies and variations; wrote the opera of "Pierre et Catherine" in 1829, and a ballet for London in 1832; is best known by his "Postillon de Lonjumeau," written in 1836. In 1857 he published his autobiography and souvenirs of a musician.

ADAM, ALBRECHT, 1786-1862; d. Munich. He studied painting in Nuremberg; served in the Austrian campaigns against Napoleon, but subsequently served with Beaumarchais, and painted the battle-scene of Labau. He accompanied Eugène in the campaign of 1812 as far as Moscow, and prepared drawings to illustrate Eugène's military career; painted several large war pictures—his last being the "Battle of the Moskva," for king Louis of Bavaria.

ADAM and EVE. The narrative of the creation and fall of A. and E. is given in Genesis. To the scriptural account the later Jewish writers in the Talmud have made many tasteless additions. They tell us that the stature of A., when first created, reached to the heavens, while the splendor of his countenance surpassed that of the sun. The very angels stood in awe of him, and all creatures hastened to worship him. Then the Lord, in order to show the angels his power, caused a sleep to fall on A., and removed a portion of every limb. A. thus lost his vast stature, but remained perfect and complete. His first wife was *Lilith*, the mother of demons; but she fled from him, and afterwards E. was created for him. At the marriage of A. and E., angels were present, some playing on musical instruments, others serving up delicious viands; while the sun, moon, and stars danced together. The happiness of the human pair excited envy among the angels, and the seraph Sammael tempted them and succeeded in leading them to their fall from innocence.—According to the Koran, all the angels paid homage to A., excepting Eblis, who, on account of his refusal, was expelled from paradise. To gratify his revenge, Eblis seduced A. and E., and they were separated. Adam was penitent, and lived in a tent on the site of the temple of Mecca, where he was instructed in the divine commandments by the archangel Gabriel. After 200 years of separation, he again found E. on Mt. Arafat. Many other traditions of the Jews and the Mohammedans respecting A. and E. may be found in Herbelot's *Bibliothèque Orientale*.—In the system of the Christian Gnostics and Manichæans, A. is one of the highest æons.—According to the Calvinistic theology, A. was the *covenant head* or *federal representative* of the whole human race, who were thus involved in the consequences of his breach of the *covenant* (q.v.) which God made with him at his creation. This view is supported by reference to the parallel drawn between A. and Christ in Rom. v. and 1 Cor. xv., in the latter of which chapters Christ is called, in contradistinction to A., "the second man," and "the last A."

ADAM DE LA HALLE, ADAMAURA, or "The Hunchback of Arras," one of the wandering poets or *trouvères* of the 13th c. He was in the suite of count Robert of Artois in 1282. A.'s works were superior to those of most of his contemporaries, and had enough of dramatic quality to secure for him a place among the founders of the drama in France.

ADAMAW'A, the Mohammedan name of a country in central Africa, visited by Dr. Barth in 1851; 6° 30' to 11° 30' n., 11° 30' to 11° 16' e.; about 200 m. long by 70 wide; capital, Yola, a city of 12,000 inhabitants. A. is a sub-kingdom, composed of a mixture

of pagan tribes conquered by the Foolah chieftain Adama, who subdued the region when it was known as the kingdom of Fumbina. It is a fine country, well watered, generally flat, rising towards the s. to 1500 ft. or more, with a few groups of mountains. Grass is plentiful; meat very dear, an ordinary goat being worth as much as a slave girl. Elephants are common; the ayu, an animal resembling a seal, lives in the rivers, feeding at night on the grass of their banks; and there is an indigenous ox, dark gray and less than three feet high. The standard of value is native cotton cloth 2½ in. wide, length indicating price. The Mohammedan population dress decently, some even well; pagans wear strips of leather around the loins. Slavery is universal,—many individuals owning more than a thousand. There are a few Arab colonies. The governor of Yola calls himself sultan and receives an annual tribute of 5000 slaves, besides horses and cattle.

ADAMS, a co. of w. Illinois, on the Mississippi; 760 sq. m.; pop. '70, 56,362; Bear creek drains the n. part; the Quincy and Chicago and the Quincy and Eastern railroads pass through the co., and the Illinois and Southern Iowa forms a junction with the Quincy and Eastern. The surface is rolling and mostly covered with timber, but some portions are well cultivated, and there are several manufactories. Co. seat, Denver.

ADAMS, a co. in e. Indiana, bordering on Ohio; 324 sq. m.; pop. '80, 14,777. It is watered by the Wabash and St. Mary's rivers; mostly wooded; surface level and productive. Co. seat, Decatur.

ADAMS, a co. in s.w. Iowa, on the Nodaway river, and the Burlington and Missouri river railroad; 432 sq. m.; pop. '80, 11,874. It is an agricultural region. Co. seat Quincy.

ADAMS, a co. in s.w. Mississippi, on the M. river; 440 sq. m.; pop. '70, 19,084—14,287 colored. The land is highly productive. Co. seat, Natchez.

ADAMS, a co. in s. Nebraska, bounded n. by the Platte, and drained by the Little Blue river. The white population in 1870 was but 19.

ADAMS, a co. in s.w. Ohio, on the O. river; 500 sq. m.; pop. '70, 20,750. It is hilly, fertile, and adapted to fruit, timber, and sheep raising. Co. seat, West Union.

ADAMS, a co. in Pennsylvania, on the Maryland border; 530 sq. m.; pop. '70, 30,315. South mountain is on its southern border, and the co. is mostly uneven. Copper mines have been worked with some advantage, and there are marble quarries. Co. seat, Gettysburg, which has railroad communication to the e. and n.

ADAMS, a co. in central Wisconsin, on the W. river; 650 sq. m.; pop. '80, 6755. The surface shows chiefly forest and timber land, with abundant water power. Co. seat, Friendship.

ADAMS, a t. in Berkshire co. Mass., on the Hoosac river; pop. '75, 15,760; four villages in the town—North Adams, South Adams, Maple Grove and Blackington. In the t. is Greylock mountain, 3500 ft., highest in Mass. The w. end of the Hoosac tunnel is at North Adams, where two railroads terminate. The chief business is manufacturing, in cotton and woolen factories, paper mills and print works. At North Adams is the first successful employment (at shoemaking) of Chinese laborers; they engage for three years, and are faithful, honest and peaceable.

ADAMS, CHARLES BAKER; b. Mass., 1814, d. St. Thomas, 1853. He graduated at Amherst and was a naturalist; assisted prof. Hitchcock in geological survey of N. Y.; became tutor at Amherst, 1837; professor of chemistry and natural history in Middlebury college, Vt., 1838-47; professor at Amherst from 1847 till his death. In 1845-7 he was engaged in the geological survey of Vt. He went several times to the West Indies; wrote on conchology, and with assistance of Prof. Gray, of Brooklyn, published an elementary work on geology.

ADAMS, CHARLES FRANCIS, LL.D., b. Boston, 1807; son of John Quincy. He passed ten years in Europe with his father, and learned Russian, German and French. In 1817 he entered the Boston Latin school; graduated at Harvard college in 1825; studied law with Daniel Webster, and was admitted in 1838, but did not go into practice. In 1829, married a daughter of Peter C. Brooks, and became a brother-in-law of Edward Everett. In 1831 he was sent to State legislature, serving three years in the house and two in the senate. In 1848, candidate for vice-president with ex-pres. Van Buren on the freesoil ticket. In 1858, elected to congress; supported Lincoln with public addresses, in company with Wm. H. Seward. In 1861, appointed minister to England, and managed American affairs through the crisis of the war with much success. In 1871 he was one of the arbitrators for the U. S. at Geneva. In 1872, was nominated for vice-president, with Chas. O'Connor for president, by democrats who would not support Horace Greeley; but O'Connor peremptorily refused, and A. would not stand without him. Mr. A. has written much for the *North American Review*, the *Christian Examiner*, and the press generally; but his main work has been the biography of his grandfather, and editing the writings of both grandfather and father.

ADAMS, CHARLES FRANCIS, jr., b. Boston, May 27, 1835; son of preceding. He graduated from Harvard 1856, and was admitted to the bar in 1858; served loyally in the war of the rebellion, commanding a regiment of colored men, and mustered out with brevet

rank of brig-gen. Identified with railroad development, and writer for the *North American Review*; with his brother, Henry Brooks A., author of *Chapters of Erie, and other Essays*.

ADAMS, EDWIN, b. Mass., 1834, d. Philadelphia, 1877; an American actor. He first appeared at the Boston National theater, Aug. 29, 1853, as *Stephen* in "The Hunchback;" went through the country, acting *Hamlet*, in 1860; was with Kate Bateman, Henry Placide and Jas. W. Wallack at N. Y. Winter garden in 1860; reappeared in N. Y. in 1866 as *Robert Laundry* in "The Dead Heart;" was in the company when Booth's theater opened, Feb. 3, 1867, and played *Mercutio* and *Enoch Arden* in that house. He lost his health in Australia.

ADAMS, HANNAH, b. Mass., 1755, d. 1832, one of the earliest American female writers; author of *Views on Religious Opinions*, 1874; *History of New England*, 1799; *Evidences of Christianity* 1801; *History of the Jews*, 1812; all of which brought fame but little money. Hers was the first body buried in Mt. Auburn cemetery.

ADAMS, HENRY BROOKS, son of Charles F., and his father's private secretary in London. In 1870 he was appointed assistant professor of history at Harvard, and became editor of the *North American Review*.

ADAMS, JOHN, (*ante*). John Adams was the great-grandson of Henry, the English emigrant; his father was a deacon of the church and selectman, a farmer of small means and a shoemaker, but he gave John a good education at Harvard, whence he went to Worcester and took charge of a school. He was ambitious, and only lacked influence to get into the army; then he thought of divinity, but the confusion and wrangling of sects dismayed him, so he settled on law. In 1764 he married Abigail Smith, daughter of the minister at Weymouth, and a person above his social position. She proved a good wife and mother and made his home happy. Soon after marriage he went into politics with other opponents of the stamp act and parliamentary oppression. He was selected as one of the counsel of the town of Boston, the others being Jeremiah Gridley, the head of the bar, and James Otis, the famous orator. They were to present to the governor and council a memorial asking that courts might proceed with business though no stamped paper was to be had. As junior, Adams opened the business, taking the bold stand that the stamp act was void because parliament had no right to tax the colonies. The repeal of the act soon after ended the matter. About this time he began to write on "Taxation" in the *Boston Gazette*, and some of his articles were reprinted in a London paper. In 1768 he moved to Boston, and two years later was elected to the general court, though at the time he was retained to defend capt. Preston in the Boston massacre affair, who was acquitted in spite of the great prejudice existing. In the general court he began to be a leader of the patriot party, and though he soon resigned was consulted upon all important matters by governor Hutchinson. About this time he wrote articles on the independence of the judiciary and the payment of the salaries of judges by the crown. The destruction of the tea brought on the crisis and produced the congress of 1774, of which A. was one of the five Massachusetts members. There he took active part in the discussion of colonial independence, and when a declaration was agreed upon he was chosen to put the resolutions in shape. Returning home he was chosen to the provincial congress, then in session, which had substantially declared war by appointing a committee of safety, seizing the provincial revenues, appointing general officers, collecting stores and beginning to form an army. After the adjournment of this congress his pen was again at work and the "Novanglus" articles appeared in answer to pro-British papers signed "Massachusettensis." This work was interrupted by the battle of Lexington, and A. hurried to the congress in Philadelphia, which body soon became the chief authority in the colonies. Adams was satisfied that reconciliation was impossible, though a majority in congress thought differently. The siege of Boston had begun, and Adams claims that he first suggested Washington for the chief command in order to secure the active help of the Virginia delegates; but he insisted that gen. Artemus Ward should be second, which place the Virginians wanted for Lee; Lee was made third in rank. While absent from congress some of his correspondence was made public, in which he spoke very freely of his colleagues, especially John Dickinson, who, with some others, became his personal enemy for life. He was a hard worker in congress, chiefly in committees; was on the naval committee, and his rules then written are the basis of our present naval code. Late in 1775 he was appointed chief justice of Mass., but never took the seat, resigning the next year. In congress freedom was slowly gaining ground; A. was in favor of the adoption of self-government by each of the colonies, then a confederation, and then treaties with foreign powers. May 13, 1776, he carried the first proposition, and the others naturally followed. A resolution by Robt. H. Lee offered under instructions of the Virginia convention, that the "colonies are by right and ought to be free and independent," was warmly supported by A. and carried by seven states to six. A. was put on the committee on the declaration and on foreign affairs, and was chairman of the congressional board of war, in fact the war department, where he gave the hardest labor for 18 months, and almost alone created such a war department as we had; and in this and other work he gained the reputation of "the clearest head and firmest heart of any man in congress." Near the close of 1777 he was appointed commissioner to France to supersede Silas Deane. The French alliance was already made, and Franklin commissioned as ambassador. A. came home in 1779 in the ship with our first minister from a

foreign power. He was made a member of the Mass. constitutional convention, but was immediately appointed minister to Great Britain to treat for peace, and returned to Europe in the same frigate that had brought him home. Soon after arrival in London he went to Holland to negotiate a loan, and was made minister to that country while there. He secured a loan of \$2,000,000. After peace, with which he had much to do, he was sent as minister to England, and arrived in London in May, 1785. He was civilly but coldly received, and his situation was anything but agreeable; so, at his request, he was recalled in 1788. While in England he prepared his *Defense of the American Constitution*, a work which subjected him to the charge of anti-republican and even monarchical tendencies. Under the newly organized federal government he became vice-president, and gave probably more casting votes in the senate than all vice-presidents since; giving about twenty, nearly all to support Washington's policy or on some important organic law. Up to this time A. and Jefferson had generally agreed, but differing views of the French revolution separated them widely—A. vehemently denouncing that outbreak as a great evil. The strife became so warm that when the second presidential election came on, the friends of Jefferson nominated George Clinton for vice-president against A., but failed to defeat him. With Washington, A. heartily supported the plan of neutrality, while the Jeffersonians were eager for discriminations against England. Washington declined a candidacy for a third term, and then came our first partisan contest for president; Adams, Hamilton, Jay, Jefferson, and Thomas Pinckney were more or less in the field. In the electoral college A. barely prevailed, having 71 votes to 69 for Jefferson; (as the law was then the electors voted for two men without designating the office—the highest vote made the president, and the next highest the vice-president). A. charged Hamilton with dividing the vote of the north and east, and that, with other contemporaneous troubles, broke up the federal party. Our French relations were in a critical state when A. took the chair; our minister, James Monroe, had disregarded his instructions and led us into difficulty with the wily Talleyrand, and the exposure of this entanglement aroused a strong anti-French feeling and revived the old federal party; but some unlucky appointments by A., such as Vans Murray for minister to France, soon checked this resurrection. When the new commission reached France, Bonaparte was in power, and there was no further difficulty. When the election of 1800 came on, the federal party was only in fragments; the republicans (soon to be democrats) were strong and growing rapidly under such skillful leaders as Jefferson and Burr. A. was still popular with the people, but his opponents loaded him down with the French troubles, the alien and sedition laws, and many sins of which he was not guilty; his private correspondence was exposed, and to all, as in Washington's case, was added the charge that he selected his cabinet under British influence. There was no choice of president by the people's election: Jefferson had 73 votes, Burr 73, Adams 65, Pinckney 64. After many ballots the house of representatives chose Jefferson for president and Burr for vice-president, and on the day of inauguration John Adams left office without waiting to see his opponent take the chair. He had no intercourse with his successful rival for thirteen years. A. at once quitted public life; he had been frugal and was not without estate, and his home was happy, until the death of his second son; his hope, however, was in his son John Quincy, whom he desired to see seated in the presidential chair. Few men have fallen so suddenly from high political importance to zero; in the last year of his term he received and wrote letters by thousands; the next year he received hardly a hundred. He lost the favor and got the spite of both parties. He was bitterly assailed long after he left office, and his misdeeds were even used in the campaign against his son in 1824. But though his official utterances were stopped, his pen was busy. He defended himself in the newspapers, and brought to light many important historical facts. After Jefferson left public life he and A. were reconciled and corresponded during the remainder of their lives, both dying on the same day, the day of all in which they might desire to go—July 4, 1826, the semi-centennial anniversary of the declaration of independence in which both had taken deep personal interest. When A. was in his 86th year he was chosen a delegate to the convention to revise the Mass. constitution, and did much to bring about a modification of sections respecting religion and support of churches, for with years he had grown liberal, even ahead of his time. In person he was above medium height; with a stout, well-knit frame, growing corpulent with age; large head, wide and expansive brow; a mild and even humorous eye; general aspect grave and imposing; he delighted in society and conversation and was a good talker; affections warm but not particularly demonstrative; anger violent and soon cooled, and without malevolence; impatient of cant and of opposition to his well-established views.

ADAMS, JOHN, the assumed name of Alexander Smith, one of the mutineers of the English ship *Bounty*; b. London, 1764, d. Pitcairn island, Mar. 29, 1829. Nine months after the mutiny A. and his sailors, with some men and women from Tahiti, landed on Pitcairn island and formed a government of which he was the head. In 1800 he was the only surviving Englishman. He established worship and such a school as was possible. In 1808, capt. Folger, an American, landed there and brought the world the first news of this strange settlement. A. had not heard a word from civilized countries in 20 years. England never sought to punish him, and he died in peace, leaving a prosperous and religious people.

ADAMS, JOHN, LL.D., 1772-1863; teacher and philosopher. He graduated at Yale 1795; was principal of two or three academies; went to Ill., where he introduced valuable modifications in school laws, and organized many Sunday schools. He wrote on education and training the young.

ADAMS, JOHN QUINCY (*ante*). Under the advantages secured while with his father abroad, John Quincy became one of the best educated men of his time. He graduated from Harvard in 1788, and studied law with Theophilus Parsons three years; was admitted to the bar in 1791, and mixed law practice with writing for the newspapers, especially discussing French neutrality and Tom Paine's *Rights of Man*. In 1794 Washington appointed him minister at the Hague; in 1797 he married the daughter of Joshua Johnson, formerly a merchant at Nantes. On Washington's written advice, president Adams appointed him minister to Berlin, where he learned German and translated Wieland's *Oberon*, but did not publish it, because Sotheby's translation just then appeared. Jefferson recalled him, and in 1802 he was a member of the Mass legislature. When only 36 years of age he was elected senator in congress, but soon afterwards resigned. In 1806 he was professor of rhetoric and belles lettres in Harvard. About this time may be noted the first appearance of the sectional ideas which culminated in the war of the rebellion of 1861-5. During a visit to Washington, A. had a conference with Jefferson in which he charged a portion of the federal leaders with a design of dissolving the union and establishing a separate northern confederacy. This charge was often repeated, and for a dozen years it seriously affected the administration of the government, reducing the statesmen of New England to a position of much less weight and influence in public affairs than they were entitled to or had enjoyed, and very probably restricting Mr. A. to his one term of the presidency. This idea was said to have originated with certain federal members of congress because of the acquisition of Louisiana, and the threatened destruction, by additions of southern and southwestern territory, of the political influence of the n. and e. A. said that these members of congress were to have a meeting in Boston, at which Alex. Hamilton would be present, though he did not approve of their ideas. In 1809 Madison sent A. as minister to Russia, and during his residence there he was made associate justice of the U. S. supreme court, but declined the honor. In Russia he had much influence, inducing the emperor to offer himself as mediator between our country and Great Britain. In 1813 he was, with Henry Clay, Albert Gallatin, and Jonathan Russell, a commissioner to negotiate peace with Great Britain, which was effected at Ghent after six months' work, and signed Dec. 24, 1814. The next spring A. was made minister to England, and was there until Monroe called him home to be secretary of state, in which position he had important work in defending gen. Jackson's conduct in Fla. against Spain, in the Miranda expedition, and in the question of the La. boundary, in which the Sabine river was accepted as a compromise. Near the end of Monroe's first term the strife between slavery and freedom began on the occasion of the bill admitting Missouri, sent to Monroe for his signature. He submitted two questions to his cabinet: 1. Has congress constitutional power to prohibit slavery in a territory? 2. Was the term "forever" in the prohibitive clause forever absolutely, or only during the territorial condition of the country specified? On the first question all the cabinet voted ye; on the second A. thought "forever" covered state as well as territorial condition, but all the other held the others view. To harmonize matters, Calhoun suggested the broader question, "Is the proviso as it stands in the bill constitutional?" And on this all voted ye. In 1824, Adams, Jackson, Crawford, and Clay, all democrats, were candidates for president. In the colleges the vote was 99 for Jackson, 84 for Adams, 41 for Crawford, and 37 for Clay. In the house A. was chosen, as it was charged, by the influence of Clay, whom he made secretary of state. As soon as A. was in office all the other factions of the democracy united against him and in favor of Jackson; both houses of congress were against him for the latter part of his term, and he was assailed with the most unscrupulous and vindictive bitterness. For his second term he got only 83 votes to 178 for Jackson. He retired to Quincy, but not to idleness. A long political life had closed; a shorter and more important one was about to open. A new party, the anti-masons, sent him to congress, and his district kept him there for seventeen years, during which he was almost ever at his post and always at work. In 1834 he was a candidate for governor of Mass., but was beaten by John Davis, who not long after beat him for U. S. senator. Free from all parties and cliques, A. became the people's champion, especially as to the right of petition, which the southern congressmen were ever anxious to restrict. Everybody soon knew that though he might oppose the purpose sought, A. would promptly present any respectful petition. This was fully tested in 1837, when he astonished everybody by presenting a petition from actual slaves; and compelled its reception, notwithstanding the uproar which it created. By degrees he gravitated towards the abolitionists. Though not identified as one of them, he was always the champion of the right of petition. He seconded the repeal of the notorious gag rule; he defended the slave mutineers of the *Amistad*, and was ready, anywhere and everywhere, to stand up for free speech. On the 26th Nov., 1846, when leaving Boston to take his seat in congress, he had an attack of paralysis, and was kept away four months; after that he was at his post, but seldom spoke. On the 21st of Feb., 1848, came a second attack, while he was in his seat in the house; he was taken to the speaker's private room,

and d. on the second day after, his last intelligible words being, "This is the last of earth; I am content." Like his father, he was a Unitarian in his religious views, though not extreme; also, like his father, he kept voluminous diaries and journals, which have been in some degree arranged and published by his son. Many of his poems, orations, and discourses have been published.

ADAMS, JOHN QUINCY, 2d, b. Boston, 1833; son of Charles Francis; graduate of Harvard. He was admitted to the bar in 1855; was on gov. Andrew's staff in the rebellion; in 1866 a representative in the legislature; in 1867 democratic candidate for governor, and defeated. In 1869-70 he was in the legislature; in 1871 he was an unsuccessful candidate for governor and representative. He has made many able and elaborate speeches.

ADAMS, NHEEMIAH, D.D., 1806-78; a graduate of Harvard, and student of divinity at Andover. In 1829 he was settled over the first Congregational church in Cambridge, and in 1834 over the union Congregational church in Essex st., Boston; author of *Remarks on the Unitarian Belief*, *The Friends of Christ in the New Testament*, *Life of John Eliot*, *Christ as a Friend*, and other religious books. After a winter in Georgia for the benefit of his health, where he lived with a rich planter, he wrote *A South-side View of Slavery*, praising its effect upon the religious character of the negroes. The work brought upon him severe animadversion. In 1869-70 he made a voyage around the world. As a writer he was greatly admired for the finish and delicacy of his style.

ADAMS, SAMUEL (*ante*), a great-grandson of Henry A., an English emigrant, from whom president John A. traced his descent. Samuel began to study law, disliked it, and went into a counting-house; became a merchant and failed; was partner with his father in a brewery, and failed after the father's death; went into politics on a paper-money question then prominent in the colony, and soon became an advocate for the people against parliamentary authority. Through him, under instructions of the town of Boston, was heard, in May, 1764, the first protest from America against lord Grenville's plan for taxing the colonies. While in the colonial legislature he acted as clerk of that body, and drew up most of the papers. He is thus described in John Adams's diary: "Adams is zealous, ardent, and keen in the cause; is always for softness, delicacy, and prudence, when they will do; but is staunch and stiff and strict and rigid and inflexible in the cause." While he was engaged in politics his wife supported the family. She died in 1757, and in 1764 he married again. He was spokesman of a committee to demand the removal of the troops after the Boston massacre, and by his boldness effected the purpose. In the Philadelphia congress he was at first conciliatory; yet no one did more to effect the separation from England, as gen. Gage testified when he excepted only "John Hancock and Sam Adams" from an offer of pardon. Adams did not like the federal constitution, but Hancock persuaded him to support it in the Massachusetts convention, though he proposed several amendments, some of which were adopted. He was an admirer of the French revolution, and in home politics inclined towards Jeffersonian views. He is described as of usual size, muscular, with light-blue eyes, fair complexion, erect and dignified; wearing a tie wig, cocked hat, and red cloak. He was poor till near the end of his life, when by the death of his son, a surgeon in the revolution, he received enough to live upon. He was the author of many state papers and political newspaper articles; but an oration said to have been spoken by him in Philadelphia, Aug. 1, 1776, and printed in London, is reckoned spurious. In this oration the English are called "a nation of shopkeepers," an epithet which was quickly adopted by the first Napoleon. Adams left only a daughter, and none of his blood now bear the name.

ADAMS, THOMAS, an English preacher in the early part of the 17th c., called by Southey "the prose Shakespeare of Puritan theologians." He was minister at Willington Wingrave, in London, and "observant chaplain" to Sir Henry Montague, the lord chief justice. He wrote *Heaven and Earth Reconciled*, *The Devil's Banquet*, and other works, and a great number of his sermons were printed. A. was a Puritan within the church of England, as distinguished from the non-conformist Puritans who left the church. "Jeremy Taylor did not surpass him in brilliance of fancies, nor Thomas Fuller in wit."

ADAMS, WILLIAM, D.D., b. Conn., 1807; son of John, LL.D. He graduated from Yale in 1827; studied theology at Andover and was ordained a Congregational minister. In 1834 he left his parish in Brighton, Mass., and took charge of the Central (now Madison square) Presbyterian church, in N. Y., where he continued more than forty years. Dr. Adams is renowned as a pulpit orator, and has been prominent in many works of charity and usefulness. He was moderator of the general assembly of 1852, and took an active part in securing union between the old and new school parties in his church. He has published several sermons, addresses, and other works. He was elected professor of sacred rhetoric and pastoral theology in the N. Y. university, but declined the position. Having recently resigned his pastorate, he is now a professor of the union theological seminary (Presbyterian) in the city of N. Y.

ADAMS, WILLIAM T., b. Mass., 1822; well known as a writer of works for the young, editor of *Oliver Optic's Magazine for Boys and Girls*, and also as a magazine and general writer.

ADAPTATION, in biology, is the process by which an organism becomes modified to suit the conditions of its life. Every change in a living organism involves A.; for in all cases life develops itself in a continuous adjustment of internal to external relations. But the term usually implies such modifications as arise during the life of an individual, when an external change directly induces some change of function and structure. All A. is limited, since an organism can vary from its congenital structure only to a certain limited extent.

ADAR, the twelfth month of the ecclesiastical and the sixth month of the civil Jewish year; according to the rabbins, from the new moon of Feb. to the new moon of March. On the 17th of A. comes the fast for the death of Moses; the 13th is called the fast of Esther, and by common usage is a festival in memory of the death of Nicanor. On the 14th and 15th occurs the important festival of Purim.

AD'DAX. See **ANTELOPE**, *ante*.

ADDINGTON, a co. in the province of Ontario, Canada, near the e. end of lake Ontario; 2000 sq.m.; pop. '71, 21,312. It has many small lakes. The n. part is little settled. Agriculture and lumber are the main business. Chief t., Bath.

ADDINGTON, HENRY (lord Sidmouth), 1757-1844; son of Dr. Addington, who was physician to the earl of Chatham, by reason of which the son became playmate and friend of the younger Pitt, who induced him to enter parliament in 1784. In 1789 he was elected speaker of the commons. When Pitt resigned he took the place of chancellor of the exchequer and formed a new ministry, but met so much opposition that he resigned in 1804, whereupon the king made him viscount Sidmouth. He was home secretary in 1812, and retired in 1824.

ADDISON, a co. in Vermont, on lake Champlain, drained by Otter creek and intersected by the Rutland and Burlington railroad; 750 sq.m.; pop. '80, 24,159. The w. part is flat, and the e. mountainous: the soil is fertile, and there are manufactures of cotton, wool and paper, and marble quarries. Co. seat, Middleburg.

AD'ELAIDE, EUGÉNIE LOUISE, 1777-1847; princess of Orleans and sister of Louis Philippe. During the revolution she was in England, and on her return in 1792 found herself proscribed as an *émigrée*. She went to the Netherlands for the protection of her brother, but he was compelled to fly. In 1793 she rejoined him in Switzerland, accompanied by Madame de Genlis, her former governess, but having spent their money they took refuge in a convent. Ten years later she met her brother in Spain, and was with him until the restoration, using her influence to induce him to accept the crown. She died two months before his fall.

AD'ELAIDE, SAINT, b. about 933, d. 999; queen of Italy and empress of Germany, daughter of Rudolph II. of Burgundy. She was married to Lothaire II., son of Hugo, king of Italy; after Lothaire's death his successor imprisoned her because she would not marry his deformed son, but she escaped and was protected by Otho the great, who married her, and crowned her empress of the west in 962. During his reign she exercised much influence in Germany, and also over her son, who succeeded him, and over her grandson during his minority. She was called "the mother of kingdoms," and was regarded as a saint, though not in the calendar, her day being Dec. 15.

ADELUNG, FRIEDRICH VON, 1768-1843; a German philologist. He was tutor of the sons of emperor Alexander of Russia, Nicholas (afterwards czar), and Michael; also a councilor of state. He wrote *The Relations between the Sanscrit and the Russian Languages*, and *An Essay on the Sanscrit Literature and Language*.

ADES TE FID'LES, known as the "Portuguese Hymn," because the duke of Leeds, who first heard it in the Portuguese chapel, mistook it for a portion of the service. It was composed by the author of "Dulce Domum."

ADET, PIERRE AUGUSTE, 1763-1833; a French politician and chemist. He was sent in 1795 as minister to the U. S., where he presented a tricolored flag to congress on behalf of the French nation. He also delivered the decree in which France complained that the U. S. treaty with England had violated neutrality, after which he published a flaming manifesto to the people and went back, or was recalled, to France, where, in 1809, he was a member of the deputies. He published *Elements of Chemistry*.

ADHESION, in botany, the union of parts in a plant which are separate in other plants, or in the younger states of the same plant. What we are accustomed to consider parts of different nature only seem so in consequence of the way in which A. occurs. A leaf is said to be stem-clasping when its base partially surrounds the stem; while a stem which seems to pierce through the leaf is said to be perfoliate; but they differ only in this, that in the former the lobes at the base of the leaf embrace the stem without adhering, while in the latter they not only clasp the stem, but grow together where their margins come in contact. The leaves of the pitcher plant, formerly thought to be special organs without analogy, are known to be leaves so rolled up that their margins have touched and adhered. Other leaves, growing from opposite sides of the stem, adhere because their bases are connate, as in the honeysuckle; and yet others grow in a whorl, or all round a stem upon the same plane, and adhere at their margins, forming a sheath in the calyx. All the sepals are often distinct, as in the buttercup; but they often also

adhere by their edge and form a cup, as in the cherry. In the corolla the petals are either all separate, as in the rose, or adhere by their edges, as in heaths. In the rose, the stamens are all distinct from each other; in the geranium they slightly adhere at the base; in the mallow they adhere in a parallel tube; in other plants they grow into a complete tube. Certain parts of the pistil are called carpels, each of which is a hollow body terminated by a stigma. These carpels are hollow, because they are formed of a flat organ doubled up so that its edges come in contact and adhere. Sometimes only one carpel is present, as in the cherry; sometimes several, as in the rose. In the nicella the styles of the carpels are all distinct; in the lily and the myrtle the styles adhere so completely that there seems to be but one. In the apple the calyx seems to grow from the top of the fruit. This is because the carpels adhere to the inside of the calyx, which grows with the fruit, and leaves its extremities in a withered state near the top of the carpels. In the cherry no A. takes place between the carpels and the calyx; and, consequently, when the fruit is ripe there is no trace of the calyx upon the upper end of the drupe. In the raspberry the fruit slips like a thimble from the receptacle, because the carpels all adhere by their sides.

ADIAPHORITES, the name given to Melancthon and those who agreed with him in submitting, in things indifferent, to an imperial edict. When, in 1548, Charles V. issued an edict called the interim, relating to disputed religious doctrines, the Protestants became involved in a controversy in which this name originated.

ADIPOSE SUBSTANCES are fatty matters—stearine, margarine and oleine being the most notable—present in some degree in most animal and in some vegetable organisms. They consist of carbon, hydrogen and oxygen, combined in varied proportions; they crystallize at low and are fluid at high temperatures; are combustible; are insoluble in water, but soluble in each other, in ether, alcohol, naphtha, bisulphide of carbon, etc. They differ in their atomic construction, and in the temperatures at which they solidify; pure stearine is solid at 140° F., while oleine is fluid to near the freezing point of water. Stearine is most abundant in hard fats, as tallow; oleine in the more fluid fats or oils. These substances, combined with glycerine (q.v.), exist in adipose tissue, microscopic in the cells of the liver and of some cartilages, in the substance of the brain and nerves, in marrow, in chyle, milk, and the yolk of eggs. A healthy appetite craves a certain amount of fat-producing food, furnished either by the animal tissues which contain it, or from vegetable sources, as nuts, olives, Indian corn, and other seeds. The larger proportion of fats is formed in the processes of digestion from the starch and sugar of the food consumed by men and animals.

ADIRON'DACKS, a cluster of mountains in northern N. Y., terminating in the Catskills. The largest number and the highest peaks are in Essex co. Mt. Marcy, 5337 ft., is exceeded in this part of the country only by Mt. Washington. The A. cover about 2½° of lat. and 1½° of long., the general direction being from n.e. to s.s.w. The peaks are conical, the slopes abrupt, and the scenery is wild and grand. The rivers Saranac and Ausable flow from them, n.e., and the Hudson, Cedar and Boreas to the s. In the tract are many ponds and lakes; Racquette lake, very irregular in outline, being the largest. Some of these lakes are 1700 ft. above sea level. The A. region once abounded in caribou, moose, deer, bear, panther, beaver, otter, and smaller game, and is now famous for salmon, trout, pike, and other game fish. Caribou are gone, and moose nearly so, but it is still a favorite hunting country. Of late years the A. region has been a popular summer resort for those who desire life in camp, or wild scenery. There is little agriculture, but a large business in lumber, white pine being the most important. Magnetic iron ore has been worked, but abandoned because of the cost of transportation to market. A favorite route to the A. is by the Adirondack railway from Saratoga, connecting with stages to Blue Mountain lake, from which, through various lakes and outlets, the region may be traversed by boats. Other favorite approaches are from lake Champlain on the e., and from the St. Lawrence river on the n.

ADIT, a nearly horizontal passage opened for the purpose of draining a mine; it serves incidentally to explore the rock through which it passes; when filled with water, often used as a canal by which the products of the mine may be transported. Water raised from a depth greater than that reached by the A. is discharged through it, saving the cost of raising still farther to the top of the shaft. An A. opens in Cornwall at the level of the sea, and extends inland about 30 m., draining the district of Gwennap. It meets some shafts at the depth of 400 ft. The "Ernest August" adit in the Hartz, completed in 1864, is 13 m. long. The Joseph II. A. at Schemnitz, in Hungary, is 12 ft. high, 10 ft. wide, extends 12 m. to the valley of the Gran, and is used as a canal and a railway.

ADJUTANT-GENERAL, in the U. S. army, an officer charged with recruiting and other service, of the rank of brig.-gen. He has about 20 assistants of various rank. The main duties of his office are to publish orders, write out and issue instructions, receive and care for returns, keep account of the state of the army and the position of forces, regulate details of the service, carry on correspondence, preserve order; and in active war to establish camps, supervise hospitals, muster and inspect troops, form parades and line of battle, and care for prisoners and deserters.

AD LA'TUS, a person who assists an official, such as interpreter for an ambassador who does not speak the language of a court. Sometimes, as in Austria, general officers act *ad latus* to corps or provincial commanders.

AD'LER, GEORGE J., P.H.D., 1821-68; a native of Germany. He came to the U. S. when 12 years old, and was professor of German in the N. Y. university from 1846 to 1854, and a teacher and writer of books of education for some years later. Among his works are a German grammar, a reader and a dictionary of English and German, a Latin grammar, and various translations. His *Letters of a Lunatic* appeared but a short time before he became an inmate of the asylum for the insane, in which he died.

AD'LERBERG, VLADIMIR FEDOROVITCH, Count; b. 1793; a Russian statesman. In 1817 he was adjutant to the grand duke Nicholas, and later his especial companion; in 1852 he was minister of the court, in constant attendance on the emperor, and kept the position under Alexander II., retiring in 1869 on account of old age. He was postmaster-general, and was the author of many reforms in the service.

AD'LERBERG II., ALEXANDER, Count, eldest son of Vladimir Fedorovitch, succeeding the latter as minister of the court. He was a school-mate of the emperor and inseparable from him, accompanying him in his visits to Germany and the Caucasus, in 1871.

AD'LERBERG III., NICHOLAS, brother of Alexander; adjutant-general of the emperor of Russia. He was governor-general of Finland, and author of *From Rome to Jerusalem*, an account of his travels in the Holy Land.

AD'LERCREUTZ, KARL JOHANN, Count, 1757-1815; a Swedish general in the Finnish-Russian war in 1808, and one of the leaders who arrested Gustavus IV. in his palace. He was made lieut.-gen. in 1809, and count in 1814.

AD'LESPARRE, GEORG, Count, 1760-1835; a confidant of Gustavus III. of Sweden. He was in the campaign against the Russians in 1809, and one of those who arrested Gustavus IV., for which he received the public thanks of the diet and was promoted to high dignity. In 1831 he was fined for publishing secret state papers, and private correspondence with princes.

AD'LESPARRE, KARL AUGUST, Count, 1810-62; eldest son of Georg, and author of poems and novels and historical works.

ADMETUS, a mythical king of Phææ, in Thessaly, succeeding his father, Pheres. He was in the Calydonian hunt and the Argonautic expedition; Apollo was his herdsman for a year while banished from Olympus. He was husband of Alcestis, daughter of Pelias, and got exemption from death on condition that his father, mother or wife would voluntarily die in his stead; this Alcestis offered to do, but Hercules rescued her from Pluto and restored her to A.

ADMINISTRATION (*ante*), in American politics a general term for the federal or a state executive government. We speak of Washington's A., meaning the federal executive government during the time in which he was president; and of the policy, acts, omissions, errors, etc., of the A. of the nation or of any state. The supporters of the officials at the time in power are called the A. party. The "cabinet" is sometimes used as synonymous with the federal A.

AD'MIRAL (*ante*). In the U. S. navy this office was created by degrees; rear-admiral in 1862, in compliment to Farragut for heroism; vice-admiral in 1864 for the same man; and admiral July 25, 1866, also for him. A. is equivalent in rank to general of the army; vice-admiral to lieutenant-general, and rear-admiral to major-general. The pay of admiral is \$13,000 a year, of vice-admiral \$8,000, and of rear-admiral \$6,000.

ADMIRALTY JURISDICTION, in American practice, extends, in criminal cases, to offenses committed beyond any national jurisdiction and on the high sea. In civil matters it includes salvage, bottomry, hypothecation, seizures under the laws of trade; navigation or customs; prizes, charters, certain contracts between different states or foreign ports, contracts for conveyances, maritime contributions, pilotage, ship surveys, and in general all cases of trespasses, damages, assaults, etc., on the seas. The district court of the U. S. in which the action is brought has original jurisdiction. There are no admiralty courts so named. Cases may be removed to the circuit and thence to the supreme court. A suit in a civil case is brought by filing a libel, upon which a warrant for arrest or attachment may issue; or there may be a simple notice to appear; or there may be process for the arrest and seizure of the articles. Thereafter stipulations may be made or bail taken. Testimony may be given orally, but in cases of importance it is usually written. No juries are called; the decree of the court ends the matter. In a criminal prosecution under A. J. the proceedings are according to those at common law. With regard to jurisdiction, where a seizure has been made the court of that especial section has jurisdiction, though the act of seizing may have occurred in a different district. In seizures out of special jurisdiction, or on the high seas, the court where the goods, persons or things may be landed has jurisdiction. A district court has also jurisdiction over all torts and injuries committed at sea or within ebb and flow of the tide. In one instance A. J. was held and admitted in a case of collision that happened in an inland state on a river more than 200 m. from the ocean. Any court having A. J.

has the power to redress personal wrong treatment of a passenger at sea by the master of a vessel. As a court of admiralty, the district court has, concurrent with common law courts, jurisdiction over maritime contracts without exception as to form or by whomsoever executed, such as charter parties for foreign transit, the wages of seamen, etc. To a certain extent all these matters of jurisdiction apply to our lakes and navigable rivers. Seamen in port, if on tide-water, engaged in commerce, are within A. J.; but hands on ferries are not. Persons actually employed in the navigating of a vessel, such as pilots, engineers, firemen or deckhands, may sue for wages under A. J.; but waiters, musicians, and those who have no part in navigation, cannot. Congress has provided for extraordinary jurisdiction in admiralty in cases of seizure under the navigation, trade or impost laws of the U. S.; but the act reserves to all sailors the common law remedy, where the common law is competent to furnish it. A. J. extends over captures within the waters of the U. S., or within a marine league of land; the civil jurisdiction extends to seizures on land under federal laws, and suits for penalties and forfeitures incurred under such laws. But in the hearing of seizures on land the court sits as at common law, with jurisdiction distinct from that in case of seizure on navigable waters; and these common law seizures may be tried by jury. Suits to the lower limit of \$100, instituted by the U. S. or an officer thereof, are within A. J. Under this provision the head of a department, as the postmaster general, may sue for money due the government. Lastly, actions by or against our consular representatives are embraced in A. J. By an act of 1842 the district (or admiralty) courts have concurrent jurisdiction with the circuit courts in crimes and offenses against the nation that are not liable to capital punishment.

ADO'BE, sun-baked bricks, of fine sand and clay dust, made in the same manner as common bricks, but very smooth and hard. They are much used for building dwellings in Mexico and C. America. Adobe houses are generally of one story, warmer in winter and cooler in summer than wooden or stone buildings.

ADOLPHUS, or ADOLPH, of NASSAU, 1250-98; son of Walram, count of Nassau. He was the successor of Rudolph, count of Hapsburgh, supplanting the natural heir, and was crowned king of Germany, June 24, 1292. A. agreed for a large subsidy to assist England in her war with France, but failed to fulfill his part of the contract. For certain high-handed acts he was summoned before the college of electoral princes, refused to appear, and was formally deposed in June, 1298, when the crown was restored to Rudolph's son. Both took the field in person, and A. was killed in the first battle.

ADOLPHUS, FREDERICK, 1710-71; of the house of Vasa, and duke of Holstein-Gottorp. He was elected to the Swedish throne in 1743, but the royal authority was so circumscribed by the council of the states, or nobles, that he was only a nominal king. In 1769 he offered to resign, but, on some concessions by the nobles, was induced to retain the throne till his death, when his son Gustavus III. succeeded him.

ADOLPHUS, JOHN, 1766-1845; an English lawyer, celebrated in criminal practice. He gained much credit in the defense of Arthur Thistlewood, charged with treason in the Cato street conspiracy, in London, 1820. He was the author of a *History of England from the Accession of George III.*, and *Biographical Memoirs of the French Revolution*.

ADOLPHUS, JOHN LEYCESTER, son of Frederick, a barrister and author of a curious book, *Letters to Richard Heber, esq., containing Critical Remarks on the Series of Novels beginning with Waverley, and an Attempt to Ascertain their Author*, in which book he showed that no other than Walter Scott could have produced the novels in question.

AD'ONAI, signifying "lord," or "my lord," or "master;" a proper noun used by Hebrews where "Jehovah" occurs in their scriptures, the latter being deemed the holy name, and not to be openly pronounced. It is said that the true pronunciation of the Hebrew letters for Yahve, or Jehovah, is lost.

ADO'NIA, feasts in honor of Venus and Adonis. They lasted two days, one of lamentation, and one of mirth, typifying the death and resurrection of nature.

ADON'IC VERSE, a dactyl and spondee, or dactyl and trochee, adapted to light, lively versification, as the famous hymn:

"Plaudite cœli;
Rideat Æther," etc.

ADORATION, an act of homage or worship among the Romans, performed by raising the hand to the mouth, kissing it, and then waving it towards the adored object. Sometimes the devotee kissed the feet or knees of the images of the gods, and Saturn and Hercules were saluted with the head uncovered. It was natural to extend to great men the A. first paid only to the deities, and Greek and Roman emperors were adored by bowing or kneeling, touching the imperial robe, and kissing the hand that did so. Eastern A. was to fall on the knees at a prince's feet, striking the forehead on the ground, and kissing the earth or floor. Such A. was refused by Conon to Artaxerxes, and by Calisthenes to Alexander the great. In England kissing the queen's hand is a form of A. The kissing the foot or slipper of the pope is the form in Rome, an example set by the emperor Diocletian; but the Roman Catholic church makes a distinction between *latría*, a worship due to God alone, and *dulia* or *hyperdulia*, the A. paid to the virgin, saints or martyrs.

ADORNA, CATHERINE, or CATHERINE OF BOLOGNA, 1413-63; of noble descent. She was abbess of a convent in Bologna of the order of St. Clare, and was distinguished for her rapt and devout piety. It was claimed that she could prophesy and perform miracles, and a book of her *Revelations* was published in 1511. Her name is revered even among Protestants of the present day.

ADORNO, ANTONIO, doge of Genoa, elected 1384; d. 1397; three times driven out and as often re-established. It is said that he induced the Genoese to become subject to Charles VI. of France, but they did not remain so.

ADRASTE'A, "she whom none escapes," a goddess of retribution, like, or perhaps identical with, Nemesis.

ADRAS'TUS, a king of Argos, contemporary of Theseus, father-in-law of Polynices, and leader of an expedition against Thebes to restore Polynices to the throne. This was the "war of the seven against Thebes," and was not successful, all the seven save A. being killed. Ten years later Thebes was captured and destroyed, in which conflict A. lost his son, and soon afterwards died of grief.

A'DRIAN, a city in Lenawee co., Mich., the co. seat, on the Raisin river and the Mich. Southern railroad. It is in a grain-raising region. There is good water power, and there are many factories; about a dozen churches and a Protestant Methodist college. Pop. '70, 8438. It is a thriving and pleasant city, having some importance as one of the points of repair and supply for the Mich. Southern railroad.

A'DRIAN, Roman emperor. See HADRIANUS, *ante*.

ADULTERY (*ante*). In some of the United States A. is made criminal by special law; in some it is not so recognized; in some the act itself is not a crime, but open and continued A. is. Some statutes define the crime; some only state the punishment; and this leaves a wide margin for interpretation by courts, giving rise to great diversity of opinions and decisions. Some hold that if one only of the parties be married, the other does not commit A.; some that a married man with a single woman does not commit A. because the act cannot impose spurious issue on a husband or wife. In Massachusetts, in case of a married woman and an unmarried man, the latter is deemed guilty. In New York, in such case the man does not commit A., his offense being, as in Virginia, only fornication. Connecticut and Iowa punish man and woman alike; but where no exact statute exists the general drift of opinion and decision is that a married person commits A., and an unmarried person only fornication; therefore criminal A. is the voluntary sexual intercourse of a married person with another person who is other than the proper husband or wife. Living together without marriage is hardly reckoned to be A., and seldom interfered with unless the parties are otherwise objectionable. In several states no criminal prosecution can be commenced for A. except on complaint of the husband or wife of the person charged with the offense.

ADVANCEMENT, in law, a gift by a parent to an heir, of all or a portion of that which he or she would be entitled to upon arriving at a certain age, or upon the death of the advancer. An A. is legal only from a parent to a child. Any such gift is presumptive by an A., but the contrary may be shown. No regular form of an A. is needed. An A. has the effect of reducing by its amount the distributive portion that would come to the receiver.

ADVANCEMENT OF SCIENCE, ASSOCIATIONS FOR THE, well-known bodies of scientific men, especially in Great Britain and the United States. The English body was organized in 1831, under the lead of David Brewster, and in three years grew from 100 to 1400 members; its annual transactions form volumes of about 500 pp. each. The American association began in 1847 at Philadelphia, and was organized by geologists chiefly; but now embraces almost every prominent scientific man in the country. The association meets annually, changing its place from city to city. The doings and documents, except abstruse mathematical papers, are published yearly.

ADVENTISTS, a sect of millenarians; called "Millerites" after William Miller, the founder, b. Mass., 1781, d. 1849. About 1833 he began to preach the second coming of Christ, which was to occur in 1843, and made an early disciple of Joseph V. Himes, a man of great energy, who established *The Signs of the Times*, and after that *The Advent Herald*, to advocate the doctrine. They were followed by many thousands, chiefly of the uneducated class, and preparations and even ascension robes were made for the great day (in July, 1843); but it passed, and there was not an end of the world. Other fixed periods passed with the usual disappointment, and the sect dwindled, after Miller's death becoming almost unnoticeable. Still they exist, though they no longer fix specific dates for the great event, but say that it may happen at any moment. They differ from the standard doctrine of the church in other points besides their special view of Christ's personal coming; for most of them seem to hold that the soul is material, and dies with the body; and that only the righteous will share in the resurrection; though there is some variety of views among them on this point. It is supposed that regular A. number less than 20,000 in the United States.—ADVENT CHRISTIANS, known chiefly in the western states. They publish a weekly journal, *The Advent Christian Times*, tracts, etc.

ADVENTISTS, SEVENTH DAY, organized about 1844; they set no date for Christ's second advent. They are known chiefly in Michigan, where they have a publishing association; and they have sent missions to several countries in Europe, Africa and Australia. In 1877 they reported 106 ministers, 97 licentiates, 478 churches and 11,708 members. Besides their publishing house, they have a health reform institute, and an educational society. At the general conference in 1877 they resolved that "the highest authority under God among seventh day adventists is found in the will of the body of that people, as expressed in the decisions of the general conference when acting within its proper jurisdiction; and that such decisions should be submitted to by all without exception, unless they can be shown to be in conflict with the word of God and the rights of individual conscience." By the same conference the possession of the gift of prophecy by Mrs. White, widow of one of the elders, was recognized, and to it was ascribed the unity of doctrine and practice which prevailed among all the seventh day A., while other bodies of A. were crippled by divisions.

ADVERTISEMENTS (*ante*). In the U. S., advertising has grown to a surprising extent within two or three decades, and is still growing, not only in the newspapers, but in boats, railway cars and public buildings. Fences, rocks and trees are covered with print and paint. So much was this the case along routes of travel that some years ago the legislature of N. Y. enacted a law against defacing natural scenery by such devices, and the advertisers then hired vacant spaces on conspicuous walls. The shower of advertisements in the shape of small handbills is incessant, and they are put into one's hands at every step, at church doors and in hotels, in public vehicles, thrust under private doors, and sent by millions through the mails. Large boats bearing on their sails huge advertisements sail up and down all the season before a crowded watering-place, and now and then a rain of advertisements comes from a wandering balloon. When daylight fails the magic lantern throws advertisements on large screens in conspicuous places in N. Y. and other cities. The eye and the ear are attacked by the indefatigable advertiser, and music, chord and discord, horns, bells, gongs and yells are used. In legitimate newspapers the progress of advertising has been wonderful. About forty years ago an advertising agency was started in N. Y. and barely lived for the first dozen years; now such establishments are counted by scores, and some of them do business amounting to many hundred thousand dollars in a year. The city papers that in 1850 were of four pages of six columns each are now of eight, twelve, sometimes twenty pages, of which more than half the space is taken up by advertisements. One paper receives more money now for one week's advertisements than it did from that source in the first three years of its existence, which period was about forty years ago. It has printed eighty columns and nearly 4000 new advertisements in a single issue. Prices of advertising vary widely, graded if at all by the character as well as the extent of circulation, and by position in the paper. Rates may be generally stated at from two dollars down to twenty cents a line in city papers of large or fair circulation. The highest prices are for the news column, or for a notice that appears to be the voluntary statement of the journal. In the matter of "wants," those who want occupation are charged half rates or less, while employers pay about 40 cents a line, and the latter rate is the highest for the greater portion of regular advertisements. The extent and apparent extravagance of American advertising astonishes Europeans. Not long ago one publisher would take a whole page on a given day of each of four or five city papers, in which he would repeat over and over again a single announcement that occupied only four or five lines. The cost to him was enormous, but he testified that it was a judicious outlay, for the mere notoriety of such prodigal expenditure led people to inquire about him, and his publication (a literary newspaper) speedily rose from a few thousands to more than a quarter of a million of copies a week. Odd forms of beginning advertisements are not new, and are not so popular as they were a few years ago. Some journals debar pictures and very large type, and business announcements are usually plain and practical. It is impossible to learn the extent of the business. Some houses and companies do an immense amount, and some very little; but in general trade, such as dry goods, those who do the most business are the largest advertisers. For notice of meetings, lectures, amusements, the opera or the play of the night, for time of boats, trains, etc., the public in cities depend almost entirely upon the advertising columns of the morning and evening newspapers. When there was a duty of 3 per cent. on receipts for advertisements, in 1867, N. Y. city publishers paid \$80,000, representing about \$2,700,000 received for advertisements during the year.

ADVOCATE OF THE CHURCH, in the middle ages, a canon who assumed protection of a see or a particular church, defending its rights, and sometimes collecting tithes. The priests assumed this duty for the sake of the money to be made. Urban III., in 1186, tried to break up the abuse, but it was not reformed until long afterwards.

ÆACUS, the fabled son of Jupiter and Egina, and king of Egina; father of Telamon and Peleus. He was so renowned for justice that not only men, but the gods, sought for his decisions. After death, Pluto made him one of the judges in Hades.

ÆDUI, or HEDUI, a people of Celtic Gaul, between the Saône and Loire. They were the first Gallic tribe that joined in the alliance against the Romans, who had relieved

them from a German tyrant. They fought against Julius Cæsar, but were overthrown. Bibracte (now Autun in Burgundy) was their chief town.

ÆGEAN SEA. See ARCHIPELAGO, *ante*.

ÆGINE'TA, PAULUS, a surgeon of the island of Ægina, probably in the 7th c. He was a man of great knowledge, and left a synopsis of medicine, in seven books, of which the one on surgery is particularly interesting. He was the first writer to notice the cathartic properties of rhubarb, and the first physician who deserved the title of accoucheur.

ÆGIR (Anglo-Sax. *eager*, "the sea"), a Norse god, presiding over stormy oceans, who entertains the gods in harvest time. The name survives in England, where a sudden wave or "bore" running into a river from the sea is called an *eygre*, or *eager*.

ÆGISTHUS, a king of Mycenæ, adopted son of Atreus. He was a cousin of Agamemnon, whose wife Clytemnestra he seduced, and he was slain by Agamemnon's son Orestes. If Greek writers are to be believed, the family relations of Ægisthus were abominable.

ÆGIUM, an ancient city of Greece, for a time the chief city in the Achæan league. It was on the Salinus river. In Aug., 1817, an earthquake destroyed more than half of the houses of the modern town.

ÆGYPTUS, son of Belus, brother of Danaus, and king of Arabia, who conquered the region to which he gave the name Egypt. The poetic legend was that he had fifty sons, who were all murdered by the same number of daughters of Danaus, whom they sought to marry.

ÆLIA CAPITOLINA, the name given to Jerusalem by Hadrian, who expelled the Jews for rebellion, and colonized the city with Romans. The name continued until the time of the Christian emperors.

ÆLIA'NUS, an Italian writer early in the 3d c. His works are *Varia Historia* and *De Animalium Natura*, and are written in Greek.

ÆLST, or AALST, EVERT VAN, 1602-58; a Dutch painter, who excelled in depicting flowers and dead animal objects.

ÆLST, or AALST, WILLEM VAN, 1620-79; a painter of Holland, nephew of Evert Van, and his superior in similar lines of work.

ÆNIA'NES, a tribe of upper Greece of uncertain origin, noticed by Plutarch. They made many migrations. Their chief t. was Hypata, remains of which exist at Neopatra. They are said to have belonged to the Amphyctionic council, and to have joined the confederacy against Macedonia; but Strabo says that at this time they had no existence.

ÆOLIAN ISLES. See LIPARI ISLANDS, *ante*.

ÆOLIPYLE, or ÆOLIPILE a hollow metal ball with one or two inner tubes curved in opposite directions and connecting with surface orifices. Used, when filled with water or alcohol, to show the force of steam, or as a blow-pipe for lamp flame. The ancients thought it illustrated the origin of winds; hence the name, from *æolus* and *pilla*, a "ball."

ÆOLIS, district of Asia Minor, on the coast of Mysia, including Troas to the shore of the Hellespont. In the s. part there were twelve cities which formed the Æolian league; of them, Cyne and Smyrna were the most famous.

ÆOLUS, son of Hellen, brother of Dorus, and father of Sisyphus. He ruled over Thessaly, and is said to have been the founder of the Æolic branch of the Greek race.

ÆOLUS, god of the winds; a favorite of Juno. He was supposed to dwell in a vast cave in the Æolian islands, keeping the winds in bags, and letting them out as demanded by Neptune.

ÆPI'NUS, FRANZ ULRICH THEODOR, 1724-1802; a descendant of Johann; professor of medicine and natural philosophy; experimenter in electricity, and inventor of the electric condenser and electrophorus. He wrote a work to establish a new theory of electricity, endeavoring to subject its phenomena to mathematical analysis. Catherine II., empress of Russia, made him teacher to her son Paul, and inspector-general of the normal schools which she proposed to establish. He discovered the electric properties of tourmaline.

ÆPI'NUS, JOHANN, 1499-1553; a German Protestant divine, a disciple of Luther, in whose behalf he suffered arrest, although he had the most influence of any divine in n. Germany. He was a pastor in Hamburg, and one of the signers of the articles of Schmalkalden; was the author of polemical books, and was moderately upheld by Melancthon.

ÆQUI, an ancient warlike tribe of central Italy; obstinate enemies of the early Romans, against whom they made alliances with the Volsci. They were defeated by Camillus, 389 B.C., and soon afterwards were quite subdued. Mt. Algidus was one of their strongholds, whence they raided on Rome.

ÆRA'RIANS, a class in Rome having no social position now definable, and having no civil rights beyond the mere protection of the state. For bad conduct any citizen might be degraded to this position, but not for life. Persons declared infamous became

of this class, and it probably included itinerant retail merchants. They were taxed, but were not subject to military service.

ÆRA'RIUM, the public treasury of ancient Rome, containing the money and accounts of the standards of the legions, the public laws engraved in brass, the decrees of the senate, and other documents of importance. The temple of Saturn was the place of deposit. Besides this common treasury, replenished by general taxes and charged with ordinary expenditures, there was a reserve treasury, maintained by a tax of 5 per cent on the value of manumitted slaves, which was not to be resorted to or even entered except in extreme necessity. In addition to the treasuries, the emperor had a "fiscus," or separate exchequer. Augustus established a military treasury to contain all money for the maintenance of the army. Later emperors had separate private Æ., containing the moneys appropriated to their private use.

Æ'RIANS, a sect founded by Aërius of Pontus, who opposed prayers for the dead, the keeping of Easter, and certain forms of church government, holding no difference between a bishop and a presbyter.

Æ'ROE, or **ARRÖE**, an island in the Baltic, 14 m. s. of Funen; 14 m. long and 5 wide; it has a port and is well cultivated; pop., 12,400. It belongs to Schleswig Holstein, and the capital, Aëroesjköbing, is a port of some shipping importance.

ÆROKLINOSCOPE, an instrument to show differences of barometric pressure at remote stations. It consists of a vertical axis 30 ft. high, turning on a pivot, carrying at the top a horizontal arm, of which the inclination can be varied according to the difference of barometric pressure at different sides of the station; the amount of dip being indicated by a sliding rod held in position by graded notches at the lower part of the axis, each notch corresponding with one millimetre in pressure. It is used in the weather service.

ÆROPHYTES. See **EPIPHYTES**, *ante*.

ÆSIR (plural of **AS**, or "god"), the gods of the northmen of Scandinavia and Iceland. There were twelve chief gods or Æ., besides Odin, (the "all-father"), viz.: Thor, Baldur, Niord, Frey, Ty, or Tyr, Bragi, Heimdal, Höd, Vidar, Ull, Forseti, and Loki, or Lopt. The chief goddesses of Asgard, the Scandinavian Olympus, were: Frigg, Freyja, Nanna, Sif, Saga, Hel, Gefion, Eir, Hlin, Lofn, Vor, and Snotra. These names, considered in the primary old Norse signification of the words, in most instances allude to some characteristics; yet it is impossible to determine whether they personify merely certain physical powers of nature, or were originally the names of individuals in the prehistoric period. Probably they have a mixed origin, and combine real names with physical powers. The principal source of information concerning these gods is the "Edda" (see *ante*), a collection of the oldest songs and traditions of the people of Scandinavia. Thor, the son of Odin and Frigg ("the vivifying"), is the strongest of the Æ. He seems to have been a god of that Phœnician form of nature worship which was superseded in Scandinavia and northern Germany by the faith of Odin. From Thor's hammer flashed lightning, and his chariot wheels made thunder as he went through the air, cleaving mountains, loosening frozen streams and pent-up rivers, and slaying giants and monsters. He was seldom in Asgard with the other Æ., but dwelt in his mansion Bilskirner, in the densest gloom of the clouds. With his hammer he consecrated the newly wedded, and the sign of the hammer was made by Northmen when they took an oath, or any serious obligation. The early Christian missionaries in Scandinavia, finding the faith in Thor too strong to be suddenly uprooted, tried to transfer many of his characteristics to their zealous convert, St. Olaf, who was said to have resembled the old Norse god in his comeliness of person, his bright red beard, hot angry temper, and personal strength; while some of the monks of a later period tried to persuade the Northmen that in Thor their forefathers had worshipped Christ, and that his mallet was a rude image of the cross. Slaves and thralls killed in battle were believed to be under the protection of Thor, who, as the god of the Finns before the spread of the Asa religion, was honored as their special guardian against the tyranny of their old masters. In Baldur the Norsemen honored the beautiful, the eloquent, the wise and the good, and he was the spirit of activity, joy and light. His name signifies the "strong in mind." His wife Nanna reflected these attributes in a less degree. On his life depended the activity and happiness of all the Æ., except Loki, the "earthly fire," or incarnation of evil; and hence Loki, from envy of the beauty and innocence of Baldur, accomplished his death, and afterwards hindered his release from the power of Hel, the goddess of death. As the death of Baldur was to be followed by the fall of all the Æ., the gods had caused all things to swear not to injure him. But the insignificant mistletoe was overlooked or thought unimportant. Loki secured an arrow of mistletoe, and when the gods were amusing themselves by shooting at the invulnerable Baldur, Loki gave this arrow to Höd, the blind god, and directed his aim so as to hit Baldur, who was killed. The death of this beneficent god signifies the fading of summer before the blind and fierce winter, her preordained destroyer. The myth continues: After Baldur's death, the gods captured Loki and shut him in a mountain, where he will remain until the earth and all therein and the gods themselves will be destroyed by fire (the powers of evil), the companion and liberator of Loki. Odin alone will survive, and then a new and purer world will arise in which

Baldur will again appear, and Loki, or evil, be no more heard of. In the beginning of time, Loki, under the name of "Lodthur," or "flame," and as the foster brother of Odin, had united with the all-father in imparting blessings to the universe. Afterwards he left the council of the gods, and wandered into space, desolating and consuming with flame all things that came in his way. In the under-earth, where volcanic fires attest his presence, he consorted with evil giantesses and became the father of Hel, "pallid death," of Angurboda, "announcer of sorrow," the wolf Fenrir, and the Midgard serpent, who ever threaten the destruction of the world. Loki assumes any shape at will. As sensuality he courses through the veins of men, and as heat and fire pervades nature and causes destruction. After the establishment of Christianity the attributes of Loki were transferred to satan; but in Iceland an *ignis fatuus* is still known as "Loki's burning." Niord and his children Frey or Fricco, and Freyja appear to have been honored in the north before the time of Odin. Niord is said to have lived in Vanaheim, and to have ruled over the Vanir, or elves of light, long before he became one of the Æ. He is the god of oceans and controller of winds and waves, and to him sea-farers and fishermen raise altars and make prayers. Frey, his son, is the god of rain and fruitfulness, and his worship was accompanied with phallic rites. His sister and wife, Freyja, who holds a high rank among the Æ., is the goddess of love, but her influence, unlike her husband's, is not always beneficent, and varies with the form she assumes in operating on the minds of men. Her chariot is drawn by cats, who are emblems of fondness and passion; and a hog, implying fructification or sensual enjoyment, attends upon Frey and herself. The Swedes paid especial honor to Frey, while the Norwegians worshiped Thor. Tyr or Tyr was the Mars of the Norsemen. He is wise and brave, and gives victory, but he fomented strife. His name lives, in our Tuesday (Ty's day), and so does the name of Odin in Wednesday (Woden's day), Thor in Thursday, (Thor's day), and Frey and Freyja in Friday (Frey's day). Tyr's name signifies "honor," and his worship was widely spread in the north. Bragi, the god of eloquence and wise sayings, lives in our word "brag," to speak extravagantly; for when men drank Bragi's cup they vowed to perform some great deed worthy of a skald's song. At guilds and grave-feasts this Bragi cup was drunk, and at the funerals of kings or jarls the heir was not permitted to take the official place till "bragarfull" was brought in, when, rising to receive it, he drank the contents of the cup and was led to the high seat of honor. Bragi's wife was Idun, who guarded the casket of apples that gave to those who ate them perpetual youth. She was abducted by the giant Thiafi, and by Loki's craft removed to the other world. Her release in spring seems analogous to the myth of Prosperine. Heimdall, personified by the rainbow, is the god of watchfulness, the doorkeeper of the Æ. Vidar, the strongest of the gods except Thor, is the personification of silence and caution. Ull decides issues in single combat; Forseti settles all quarrels; lovers find protection in the goddesses Lofn and Vor, of whom the former unites the faithful and the latter punishes the faithless; Gefion keeps a watch over maidens, and knows the decrees of fate; Hlin guards those whom Frigg, the queen and mother of heaven, desires to free from peril. The queen herself, as Odin's wife and mother of the Æ., knows but does not reveal the destinies of men. As goddess of the earth she is known as Frygga, the "fertile summer earth," and as Rinda, the "frost hardened surface." Saga is the goddess of narration and history; her home is in Sockquabek, the abyss, an allusion to the abundant streams of narrative, from which streams Odin and Saga daily drink and pledge each other. Snotra is the goddess of sagacity and elegance, from whom men and women seek good sense and refined manners. The Norns and the Valkyrias are closely connected with the gods. The principal Norns are Urd, past time; Verdaudi, present time, and Skuld, future time. They and the Valkyrias twist and spin the threads of destiny, and make known what has been decreed from the beginning of time. In the gods here mentioned the Northmen recognized the makers and rulers of the world that now is, from whom emanated the thought and the life that pervades and animates nature. With Odin and the Æ. the intellectual life of the northern people began; and although they ascribed to them human forms and acts, these were seldom without something higher and nobler than pertains to mortals; and while they recognized the existence of a state of chaos and darkness before the world began, they anticipated the advent of another state, in which the gods, like men, would receive their reward at the hands of a supreme All-father. (See *Ases*, *ante*.)

ÆSOP, CLOBIUS, a Roman actor contemporary with Roscius, excelling in tragedy. Cicero put himself under the direction of those two to perfect his own acting, and Æ. did many friendly services to Cicero during the latter's banishment. Æ. was noted for sinking his own personality in the character he represented. He made his last appearance in 55 B.C. at the dedication of Pompey's theater, after which his voice failed him. He left a fortune to a worthless son—the Æ. who dissolved a pearl valued at \$40,000 in vinegar to have the satisfaction of swallowing the most expensive drink ever known.

ÆTHRIOSCOPE, an instrument to measure degrees of cold produced by radiation towards a clear sky; useful in determining the amount of moisture present in the upper and inaccessible strata of the atmosphere.

ÆTION, a Greek painter supposed to have lived in the 2d c. He was famous for beauty of coloring. Lucian describes his picture of the "Marriage of Alexander and Roxana."

ÆTIUS, called "the atheist," lived in the 4th c. He favored the Arians, and was banished by Constantine. He was a slave in early life; studied medicine and theology at Antioch; became a deacon, and developed the doctrines called the Ætian heresy. He was made bishop by Julian, but late in life fell into immorality, and died without honor. His followers were called Ætians.

ÆTIUS, a Roman general, b. near the end of the 4th c. He long defended Gaul from the barbarians; with Theodoric, he compelled Attila to raise the siege of Orleans; he followed the Huns to the plain of Chalons, where a great but indecisive battle was fought, in which 300,000 men are said to have been slain. The emperor Valentinian became jealous of A., and slew him with his own hand, 454 A.D. An extant coin has the legend, "Ætius Imperator Cæsar," which indicates that A. had seized or meant to seize the empire.

ÆTNA. See **ETNA**, *ante*.

AFANASIEFF, **ALEXANDER NIKOLAIEVITCH**, 1826-71; author of popular tales or folk-lore of the Russian people. He wrote *Poetic Views of Nature entertained by the Ancient Slavs*, and contributed largely to current literature.

AFFER, **DOMITIUS**, a Roman orator, teacher of Quintilian; b. in Gaul 15 B.C., died 60 A.D. He was made a consul by Caligula.

AFFIDAVIT (*ante*). In the U. S., judges, justices, notaries, commissioners, and some special officers, have authority of law to take affidavits. All the states appoint commissioners in other states (residents of such other) to exercise the power. By N. Y. law, affidavits may be taken anywhere for use in N. Y., if the person taking is authorized at the time and place to do so. Generally the authority of foreign officials to take A. must be certified or verified in court. When a judge takes an A. in court his signature must be authenticated. Our ministers and consuls abroad have power to take A., and so have British consuls and nearly all similar officers. No particular form of A. is prescribed. An A. of merit is one made by a defendant, which sets forth that he has stated his case to counsel and is by him advised that he has a good defense to the pending action on its merits. This is required to protect plaintiffs from delay by frivolous shows of defense, but does not always effect the purpose.

AFFIRMATION (*ante*), a substitute for swearing, or taking an oath. In most of the U. S. a witness may, at his own option, either swear or affirm, and with the same legal effect. In the act of affirming the right hand is raised while the formula is spoken.

AFFO, **IRENEO**, 1741-1800; an Italian writer who left numerous works on history and antiquities; also literary and political works. He was eminent as a philologist.

AFRAGO'LA, a t. in Italy, 5 m. n.e. of Naples, noted for manufactures of straw goods. Pop. '61, 16,129.

AFRANIUS, **LUCIUS**, a Roman poet and orator who lived about 100 B.C., praised by Cicero and Quintilian for the excellence of his plays.

AFRICA (*ante*). *Stanley's first expedition*. After a long time had elapsed with no authentic tidings from Dr. Livingstone, who had set out to explore the interior of A. and when serious apprehensions had begun to be entertained concerning his safety, Mr. James Gordon Bennett, jr. of N. Y., at his own expense (1869, Oct. 17), commissioned Henry M. Stanley, a special correspondent of the *N. Y. Herald*, to make a thorough search for the missing traveler. Mr. Stanley, arriving at Zanzibar Jan. 6, 1871, organized a strong and thoroughly equipped expedition. His instructions seem to have converged to a single point, "Find Livingstone." The expedition left Bagomayo, on the eastern coast of A., opposite Zanzibar, Mar. 21, 1871. The route chosen, leading towards the center of the continent by a course somewhat n. of w., had never been traversed by white men. On the 3d of Nov., after 227 days spent on the road, a caravan came in sight from the direction of Ujiji, a village on the eastern shore of lake Tanganyika. To Stanley's eager question, "What news?" the reply was "that a white man had lately arrived at Ujiji; that he was old and sick, and had white hair on his face." The conclusion instantly was, "He must be Livingstone." The leader of the search was in a state of mingled delight and impatience. With promises of extra payment to each man of his native escort, he brought them to an agreement to press rapidly on. Successive chiefs heading large parties of armed men confronted him demanding exorbitant tribute. Having complied with these demands until his resources drew near exhaustion, he escaped from the region under cover of night, and urged his journey through marshes, and among scattered trees, primitive rocks, fields of boulders, herds of buffaloes, giraffes, and zebras.

On the 236th day of the march, Ujiji was 6 hours distant. The party were all in their gayest attire, and the garments of the leader, which the thickets had torn to tatters, were exchanged for the new suits which had long been kept in reserve for the occasion. They ascended the last hill; lake Tanganyika appeared, at first a silver thread, soon a wide expanse; he crossed the ridge and Ujiji was before him, only 500 yards distant. He thought not then of weary miles, of blistering plains, of scorching suns. Fifty guns were fired; the stars and stripes led the way and the flags of Zanzibar followed after; 300 yards from the village a swift runner met them, saying only, "Good morning, sir." "Who are you?" was the reply. "Dr. Livingstone's servant, sir." "Is HE here?" "Yes, sir." "In

this village?" "Yes, sir." "Then off and tell him I am coming." With all Stanley's impatient joy, he was compelled to preserve dignity of demeanor before his savage escort. He would have run, but must only walk; meeting Livingstone he would have fallen on the old man's neck and kissed him, but reflected that a Scotchman might not like that; therefore he only lifted his hat and said, "Dr. Livingstone, I presume." "Yes," was the reply, gently spoken and with a smile. Mr. Stanley said, "I thank God I have been permitted to see you." Dr. Livingstone's response was, "I, too, am thankful I am here to welcome you." Then hands were grasped, the *Herald's* mission was explained, the presence of Arabs and Africans was forgotten. The generous supplies, brought from far, were unpacked. The letter bag, sent from Zanzibar a year before, was handed to Dr. Livingstone with its accounts from his home, and the news of the great civilized world—the completion of the Suez canal and of the Pacific railroad, the expulsion of queen Isabella from Spain, the prostration of France in the German war.

Livingstone, reduced to great straits, had been sick, could eat nothing, had refused everything except a cup of tea now and then; but new life had been infused into him by this unexpected gladness; and as the cook, inspired by success, sent in dish after dish of various viands skillfully prepared, the two feasted together with cheerful converse. Stanley having been rested and Livingstone restored, they formed plans for the future, and explored together the upper part of the lake. Stanley had been prostrated with fevers, had been delirious again and again; but what were all these things in comparison with his joy in the society of the man whom he had saved? The time of parting came, and with heartfelt farewells he set out on his return. When he reached the coast, after an absence of thirteen months, in a full-length mirror he saw another white man, haggard and thin, whose dark hair had become gray, and whose personal identity seemed almost lost.

Stanley's second expedition. After witnessing the burial of Livingstone in Westminster abbey, Stanley, seized with a resolute purpose to take up the unfinished work of African exploration, was asked by the editor of the *London Telegraph*, "Could you and would you complete the work? and what is there to be done?" His answer was, "The outlet of lake Tanganyika is undiscovered. We know nothing, scarcely, concerning lake Victoria, not even whether there be one lake or many; therefore the sources of the Nile are still unknown. And the western half of the continent is a blank." The editor asked, "Do you think you can settle all this if we commission you?" "While I live," was the reply, "there will be something done. If I survive long enough all shall be done." A telegram was sent to the *N. Y. Herald*, "Will you join the *Telegraph* in sending Stanley out to A. to complete Livingstone's work?" and the answer came back, "Yes. Bennett." The expedition thus commissioned left the eastern coast of A. Nov. 17, 1874.

Its first great object was to reach the Victoria lake, the distance to which proved to be 720 m. This was accomplished in 103 days. At first the way led along beautiful level land, varied with pleasant valleys and gently rising hills. Soon the scenery became more striking, and mountain summits appeared all around. Between 300 and 400 m. from the coast the route turned to the n., and for about 150 m. in that direction the march was difficult and calamitous. The elevation of the road increased, dense thickets were traversed, food almost failed, many of the men were sick; Stanley himself was feverish and weak, and one of his highly valued young English helpers died. At length Stanley reached Mombiti, the entrance to a rich country which extended to the Nyanza. There abundant and varied stores of food were obtained. A wide prospect cheered the eye, presenting hills, rocks, springs, and a verdant plain covered with flocks and herds. After the great lake was reached the next thing was to ascertain its size by attempts to sail round it. The English boat that had been constructed in sections was put together and prepared. Twelve of the best men were placed on board, and the voyage was commenced along the eastern shore and around to the n. and w. In two months the whole distance of a thousand m. was traversed. The fact was settled that there is one vast lake whose superficial area is 21,500 sq. m. Its surface is more than 4000 ft. above the level of the sea. Not far from the shore on the s., w. and e. the depth is 275 ft., 338 ft., and 580 ft. Near the shore, all round, is a succession of islands, a few of them quite large and many very small. On these are vast numbers of crocodiles, hippopotami, smaller lizards, and other animals. Adjacent to the lake are rocky heights, interspersed with fertile lands. In the distance lofty mountains rise. Parts of the shore appeared to be almost without inhabitants; other parts were very populous. Some of the inhabitants were hostile and treacherous; others friendly and guileless. At the north-western corner of the lake is the territory of Mtesa, the most powerful king of equatorial A. The interesting narrative given concerning him shows that he is a man of unusual ability, capable of great kindness and warm friendship, but also subject to furious storms of passion, terrible to encounter, or even to behold. From first to last he was a firm friend to Stanley, valuing highly the information and the presents which the traveler brought, and imparting all the help in his power. Born and reared a barbarous pagan, he had embraced the Mohammedan religion, apparently because convinced that it was better than his own. Stanley seems to have been wise as well as zealous in instructing him in the great facts of the Christian faith, and to have been much encouraged by his professed conviction that what he heard was good and true.

When the exploration of the Victoria Nyanza had been completed, the expedition set

out to visit the Muta Nzige, a lake on the w. which is supposed to be connected with the Albert Nyanza. King Mtesa furnished a large and, to all appearance, powerful escort; strictly ordering its commander to do everything possible for the protection and assistance of his friend. The mountainous region between the lakes is described as the Switzerland of equatorial A. Its highest summit, which has been named the Gordon Bennett, rises 15,000 ft.; Mt. Edwin Arnold is 9000 ft. high, and Mt. Lawson 11,000 ft. The people around the lake exhibited manifest tokens of hostility, and the escort becoming frightened refused to remain even for two days, within which time Stanley might have commenced the work of exploration, and afterwards could have continued it without help. For those two days he offered to pay one fourth of all the property of the expedition. But terror prevailed over avarice; consequently he was obliged to abandon his object and return to the Nyanza. On his way along the western coast he examined particularly the Alexandra Nile, which proved to be the largest affluent of the lake. As he pressed on in order to find an open road to the w. the demands of the kings and chiefs became so exorbitant and reiterated that it was impossible to proceed in that direction. He therefore again turned to the s. He was then on the summit of a ridge 5600 ft. above the level of the sea. As this was the water-shed between the Victoria and Tanganyika, we may here sum up the result of the search for the sources of the Nile so far as they are connected with the Victoria.

1. On the eastern side of it, $5\frac{1}{2}^{\circ}$ s. of the equator, little streams appear which form the head-waters of a river flowing towards the n. and called at first the Leewumba, afterwards the Monangah, and finally the Shimeeyu, under which name it enters the Victoria lake at the s.e. as one of its principal affluents.

2. On the water-shed between the lakes Victoria and Tanganyika two little rills were found, one of which flows towards the Tanganyika; but the other, uniting with similar streams, forms the Alexandra Nile, which becomes the largest affluent of the Victoria, into which it enters from the s.w.

3. The one great outlet on the lake is on the n. by the river which plunges down at Ripon's falls, and, forming a junction with the outlet of the Albert Nyanza, becomes the White Nile, the western branch of the great river whose source was for so many centuries a mystery to the nations that drew sustenance from its waters, and built, conquered, or explored the cities on its banks.

4. The next division of the great work was the circumnavigation of lake Tanganyika. This was commenced at Ujiji and continued towards the s. and w. The mean level of the lake above the sea was 2750 ft. Its area was 9240 sq.m. At Kaboga's headland, one m. from the shore, the depth was 650 ft.; two m. out no sounding was obtained with a line 1200 ft. long; further n. in mid-channel, bottom was not touched at nearly 1300 ft. Its length is 350 m.; breadth from 15 to 60 m.

5. The last and, as it proved, by far the most arduous portion of the work was to follow the Lualaba through its course in order to test the correctness of Livingstone's opinion that it flowed to the n. and e. and became finally the great Nile. Crossing the Tanganyika again, the expedition started towards the w. and n. From the time the water-shed was passed the scenery became more impressive. Streams poured down from the mountains; hills and ridges bloomed; vegetation breathed perfume; rocks were covered with garlands and trees with moss. Yet nature was gigantic as well as bountiful. Grapes were coarse, reeds tough, vines thick and long, thorns sharp as steel. The river Luama was followed to its junction with the Lualaba. The latter at this point is 1400 yards wide. Its appearance was hailed with shouts of joy. It had never been traced w. of Nyangwe. The problem now was to find its end, either in the Nile or in the south Atlantic. To the e. 830 m. of territory had been explored; on the w. 900 m. were absolutely unknown. Would this river lead e. or w.? Would following it flash light across the western half of the dark continent? At Nyangwe Stanley secured the services of Tippto-Tib, an Arab chieftain, who had been Cameron's guide across the Lualaba. For \$5000 he agreed to escort the expedition to the distance of 60 camps, the space from one to another being a four hours' march.

From the outset the journey was very toilsome; dense thickets saturated with heavy dew, and woods high and close had to be traversed. The boat-bearers were wearied out, the men murmured loudly. Tippto-Tib demanded that the contract should be dissolved, declaring he had no idea that there was such a region in the world. After full consideration Stanley resolved to change his plan, and take the great river for his road. Canoes were obtained from the natives and repaired. The native escorts were paid off and released from further service. One hundred and fifty persons embarked at Vinya Njara, Dec. 28, 1876. Instead of attempting to follow the voyagers through all the details of their course, let us attend briefly to the knowledge of the river which they obtained, and to the toil, perils and calamities which they endured.

The course of the river for 240 m. from Nyangwe was towards the n., inclining sometimes slightly towards the e.; so that to that point there was little to contradict Livingstone's opinion that it would prove to be the Nile. But after passing the 6th cataract the course turned to the n.w., and continued so for about 300 m. The final turn was to the s. and s.w. for about 1000 m. to the Atlantic, as the Congo well known to western commerce. The whole length from the source of the Zambeze s. of lake Tanganyika to the Atlantic is about 2500 m. At Nyangwe the breadth of the river was about three

fourths of a m. : at the most northern part of its course the greatest breadth was not less than 7 m. A large portion of the distance is crowded with islands. The toils and perils of the voyage were greatly aggravated by the ferocious hostility of the natives. The men of the expedition were under admirable discipline, and were not allowed to resort to force except in actual self-defense; and every effort was made to conciliate the inhabitants by peaceful salutations, forbearance, justice and generosity. The leader, indeed, gradually acquired a readiness to submit even to any tax, imposition or insolence as the price of a peaceful passage. Yet, in spite of all this forbearance, during their advance from the river Reiki on the e. to Stanley pool on the w., the expedition was engaged thirty-two times in hostile encounters. Many of the assailants were ferocious cannibals, impelled to the attack by their horrid appetite for human flesh. They rejected all offers of presents and of trade with the declaration: "We do not want your friendship or your wares; we will eat you;" and above the din of their war drums arose the frantic cry: "Meat! meat! we shall eat wajiwa meat to-day." The numerous rapids and cataracts in the river greatly increased the difficulty and danger of the voyage. Of these the Stanley falls came first, consisting of seven cataracts within a distance of about fifty m. At the first of them the main stream 900 yards wide, after a mile of rapids, rushed against a lofty ridge which confronted it. To descend by that side was impossible. But on the left was a small stream, about 200 yards wide, down which the boats and canoes were taken as near to the first falls as could be done with safety. At that point a road 15 ft. wide was cut through the impenetrable thicket, and over it the boats were dragged around the falls. This may serve as a specimen of the toil and peril involved in passing the whole seven. Some of the severest battles with the savage cannibals were fought amidst the terrors of the Stanley falls. Of this complicated warfare the passage of the second cataract may give some idea. With thirty-six men, led in a line through the bushes, the savages were driven back. In the meantime, the remainder of the expedition, being divided into two parties to work day and night, formed rude camps around the falls, at intervals of half a mile. Roads were cut from one camp to another. Then by four successive rushes the canoes were dragged from camp to camp, until, after seventy-eight hours of desperate toil, they were launched on the river below the falls. After the Stanley falls had been passed the river flowed on tranquilly for about 900 m.; and after the thirty-two battles had been fought, peaceful tribes had been reached. But below the Stanley pool the river became again the great enemy, far fiercer than at first. Before it could enter the Atlantic it had more than a thousand ft. to fall, within a distance of 150 m. Instead of its maximum breadth of 7 m., it rushed down a comparatively narrow gorge, with a steep crooked course, over a succession of cataracts. These were the furious forces with which the battle for life was now waged. Nine men were lost during one afternoon. On one occasion Stanley himself, the "great master," shooting the rapids, was in imminent danger of death; on another, the "little master," the last of the English helpers, in spite of all efforts to save him, was hurried over the terrible "Massassa" falls. Nor did they now fight only against precipices, whirlpools and floods. Famine, their last enemy, stared them in the face. Many from exhaustion were ready to lie down and die. At length, after 28 of the cataracts had been passed, Stanley had certain proof that the Livingstone river had become the Congo, emptying into the Atlantic. The object of his journey having been accomplished, the great mystery solved, the continent crossed, there was no occasion to brave the remaining falls. Emboma, an English trading post, was only 5 days distant; he at once determined to strike for it overland. The faithfully-built English boat which had sailed round the Nyanza and the Tanganyika and down the Livingstone, that had carried, or been carried, over 7000 m., was now, not without some sadness, left high and dry on a rock. The only surviving animal, on which many of the party had ridden, sank down, unable to go on; and the whole remnant of the expedition, wearied, famished and sick in body, but faithful and hopeful in spirit, began their march to the abodes of civilized men. Messengers were sent to Emboma with letters in English, French, and Spanish, saying in substance: "We are here from across A., and are starving. Send quickly food and supplies. Stanley, who found Livingstone." In the shortest time possible all needed things and many luxuries were sent. On the arrival of the wanderers telegrams flashed over all the world. Strength and courage were restored to the travelers, and in a British steamship Stanley took the survivors of the faithful band, who had trusted him as their father and obeyed him as their master, safely home to Zanzibar.

Since that time Stanley has renewed the work of African exploration under the auspices of the international association at Brussels. In the summer of 1879 he organized, at Zanzibar, the expedition from Brussels under capt. Popelin, and having seen it start for the interior by his old road, he sailed from Zanzibar in his steamer the *Abion*, with 64 native followers, and passing through the Suez canal and the Mediterranean, arrived at the mouth of the Congo two years and four months after his descent of the Livingstone. There he was joined by a steamship from Antwerp, with a full cargo of goods for the expedition, and also several small river steamers, that can be taken to pieces and do not draw more than 15 in. They are cased with iron, so as to be proof against arrows, spears, and even bullets. No violence is to be used, and whenever rejected by hostile savages, the expedition is to withdraw to seek another road. It has abundant means at its command, and will pay for everything, even for the air if necessary, rather than resort to

violence. All the Europeans, under Stanley's orders, are engaged for three years, and among them are carpenters, smiths, sail-makers, and other artisans. The steam launches are to serve as advance pickets and explorers, while the larger steamer will tow the barges containing the supplies and goods for trade. Never before has so grand an expedition been attempted in the history of African exploration.

At the present time other explorations are going on in various parts of the African continent, under the direction of parties from Germany, Russia, France, Belgium, Italy, England, Portugal, and Spain.

AFRICAN METHODIST EPISCOPAL CHURCH. American Methodists, from the beginning of their history, labored diligently for the conversion and elevation of colored people in the United States, both n. and s., thousands of whom are now in communion with the M. E. church. In 1816 a company of them, with the hope of being freer and more useful as a separate denomination, called a convention in Philadelphia, which organized the African M. E. church. Richard Allen, who had been a Methodist minister for 17 years, was chosen bishop, and was ordained by five presbyters. A second bishop, Morris Brown, was elected in 1838, and a third, E. Waters, in 1836. The doctrines and, with some unessential modifications, the government of the M. E. church are retained. The church has continued to grow, and many of its preachers have been able men. The abolition of slavery, with the kindred changes that accompanied it, has greatly enlarged its territory and added to its members. In 1864 preliminary measures for a union with the A. M. E. Zion church were taken by both parties, to be ratified at the next meeting of their general conferences in 1868. The union, however, did not then take place. In 1876 a plan of union with the independent Methodist church was adopted, to be followed (it was hoped) by the admission of all the independent churches in Canada and the United States. The number of young men who are studying for the ministry is increasing. The *Christian Recorder*, the church newspaper, enlarged and improved, is prepared entirely by colored men. An educational department has been instituted and the effort to supply the schools with competent teachers of the African race will be diligently prosecuted.

AFRICAN METHODIST EPISCOPAL ZION CHURCH, a denomination which had its origin, in 1820, in the secession of the Zion congregation (N. Y. city) from the M. E. church. It was soon joined by other congregations. The next year the first annual conference met in N. Y., attended by 22 ministers, and reporting 1426 members. At first each annual conference appointed its president. In 1838 Christopher Rush was elected superintendent for four years. In 1847 there were two general superintendents, four annual conferences (Philadelphia, Boston, New York and Baltimore) 75 traveling ministers, about 200 local preachers and exhorters, 5000 members, 50 churches, and many congregations without churches, located in 11 states, the District of Columbia and Nova Scotia. The general conference of 1864 voted in favor of a union with the A. M. E. church (q. v.), which, however, has not taken place. The doctrines are the same as those of the M. E. church. The chief officers, at first styled general superintendents, but now bishops, are elected for four years, and may be re-elected. At the general conference in 1876 measures were adopted preparatory to a union with the colored M. E. church, and providing (in case the union takes place) for an extension of the bishops' term of office to a lifetime.

AFRICANUS, SEXTUS JULIUS, a Christian writer who lived early in the 3d c. at Emmaus, in Palestine. He went to Rome to induce Heliogabalus to rebuild Emmaus, which was destroyed in wars; the town was rebuilt and called Nicopolis. He became a bishop, and wrote a work on chronology, fixing the era of creation 5499 B. C., still recognized as the Alexandrian era. He corresponded with Origen, and disputed the canonicity of the apocryphal book of *Susannah and the Elders*. He is supposed to have died in 232 A. D.

AFZELIUS, ADAM, 1750-1836; a Swedish botanist. He studied with Linnæus; in 1785 was demonstrator in the university of Upsal, traveled in England and Scotland, 1789; in Guinea and Sierra Leone, 1798; and was botanist to the Sierra Leone company, making collections and reports. He was secretary to the Swedish embassy in 1797, next year a member of the royal society; also professor of materia medica at Upsal. He wrote many scientific papers, and a notice of the life of Linnæus.

AFZELIUS, ARVID AUGUST, 1785-1871; a native of Sweden; first a school-teacher, and then parish priest for near half a century. He wrote poems in 1811, and *Farewell to the Swedish Harp* in 1848; translated Icelandic sagas, and with Feiger edited *Spanish Folk Songs*. His most valuable work is a *History of the Swedish People*, completed in 1709, when he died.

AGADIR', or **SANTA CRUZ**, a sea-port in northern Africa, on the Atlantic, 30° 27' n., 9° 36' w. It was the Santa Cruz of the Portuguese in the 16th c. In 177 B. C., during a revolt, A. was captured, and the inhabitants removed to Mogador by Sidi Mohammed. A. has one of the few good harbors in Morocco.

AGAMEN'TICUS, a hill in York co., Me., 4 m. from the sea; 673 ft. high; noted landmark for sailors. Its exact situation is 43° 34' n. and 70° 41½' e.

AGANIP'PE, a fountain in Boeotia, near mt. Helicon, flowing to the river Parnassus. The water was sacred to the muses, and gave poetic inspiration. There was a fabled nymph Aganippe, daughter of the river.

AGAPET'LE, widows and virgins among the early Christians who devoted themselves to attendance upon ecclesiastics. Immorality followed, and the early councils denounced the practice.

AGAPETUS, a deacon of St. Sophia's church at Constantinople, who presented to Justinian, in 527, a work on the duties of a Christian prince. It is highly valued, and has been often reprinted.

AGARDE', ARTHUR, 1540-1615, an English antiquarian. He was bred to the law, and became deputy chamberlain, holding the office 45 years, in which time he became proficient in antiquarian knowledge. Camden and Sir Robert Cotton were his personal friends, and with them he was among the first members of the royal society of antiquarians.

A'GARDH, JAKOB GEORG, b. 1813; son of Karl Adolph, and followed the same study. He was professor of botany at Lund in 1854. He much increased his father's large collection, and wrote several botanical works.

A'GARDH, KARL ADOLPH, 1785-1859; a Swedish botanist. He was educated at Lund. In botany he paid special attention to cryptogamia, on which he is authority. In 1812 he was professor of botany and rural economy at Lund, and lectured on general economics. He became a priest in 1816; went into politics in 1817, and was elected to the diet; in 1834 was made bishop of Karlstadt, and was the leading liberal in the diet. A. was author of several books and papers chiefly on botany, and a memoir of Linnæus.

AGA'SIAS, a Greek sculptor, supposed to have lived in the 4th c. B.C. The "Borghese Gladiator," one of his works, was found at Antium with the "Apollo Belvidere," and is now in the Louvre. It is a warrior on foot with head raised as if on guard against a horseman. Some suppose it represents Achilles, the invisible enemy being Penthesilea.

AG'ASSIZ, ALEXANDER, b. Switzerland, 1835, son of Louis, and joined his father in Boston in 1848. He graduated at Harvard in 1855, and was in the U. S. coast survey off California in 1859-60, studying the fauna of the Mexican coast. Subsequently he became largely interested in copper mining, and gave his attention successively to such scientific work as was involved in the positions of curator of the museum of comparative zoology, superintendent of the Anderson school of natural history, member of the scientific expedition to Chili and lake Titicaca, chief of the U. S. dredging expedition in the West Indies, and one of the overseers of Harvard college. He is a member of a great number of scientific societies, and has written largely upon ichthyology. He has also received prizes for success in zoological investigations.

AG'ASSIZ, MOUNT, in Arizona, 70 m. n.e. of Prescott; an extinct volcano, 10,000 ft. above the sea-level. It is a favorite summer resort, and near it is the wonderful canyon of the Colorado.

AGATHAR'CHIDES, or AGATHARCHUS, a Greek grammarian and geographer, who lived about 130 B.C. He was guardian of an Egyptian king, probably Ptolemy Soter II. A. was an orator, and wrote several works, of which only one remains.

AGATHAR'CHUS, 420 B.C.; a Greek painter; said to be the first who applied the laws of perspective. He painted a scene for a tragedy by Æschylus, and is called the first scene-painter.

AGA'THIAS, surnamed ASIANUS; 536-580 A.D.; educated at Alexandria and Constantinople; studied Roman law and practised with success; wrote love verses and made an anthology of earlier poets; but his most valuable work is a history of the years 553 to 558, in which he tells of the conquest of Italy by the Goths, of the earthquakes of 554 and 557, the beginning of the Greek and Persian war, the rebuilding of St. Sophia, the exploits of Belisarius, etc.

AG'ATHON, or AGATHO, 447-400 B.C.; a Greek tragic poet, contemporary and friend of Plato, Socrates, Alcibiades and Euripides; noted for personal beauty. After his first literary triumphs, in 416, a dinner was given to him, which Plato immortalized in his "Symposium," the scene being in A.'s house. He was sometimes ridiculed for bombast and for effeminate tastes, appearing on the stage in female dress.

AGE, (*ante*), in law, is that period of life at which persons are permitted legally to exercise certain rights which for lack of A. they had been restrained from. In general, a person is "of age" on the day preceding the 21st anniversary of birth. The "A. of discretion" is at 14 years for males and 12 for females, at which point either may marry or elect guardians. At full A. (21) male citizens can vote and hold office, except in certain specified cases, such as a representative in congress, who must be 30 years of age, a senator 35, and the president 35. The "military A.," confined to males, is from 18 to 45 years. In N. Y. no judge can hold office after he is 70 years of age; male citizens over 21 and under 60 are subject to jury duty. In mythology and poetic fancy, the course of the world was divided into 5 ages: the golden A., when Saturn reigned, was a period of

innocence and happiness; the silver A., under the rule of Jupiter, was the voluptuous period; the brazen A., when Neptune held sway, was a warlike interval; the heroic A. under Mars was also warlike and adventurous; while the iron A., with Pluto as the ruler, was one of human degradation and misery. In chronology we have many ages, the principal being the antediluvian and the postdiluvian. In anthropology there is the A. of stone, the A. of bronze, and the A. of iron, indicated by the use of these substances for tools in successive periods. In geology there are the azoic, the silurian, the devonian, the carboniferous, the reptilian, the mammalian; and the A. of man, or the present A. In letters there are the A. of Pericles in Greece, the Augustan A. in Rome, the Elizabethan A. in England, and the Augustan A. in France under Louis XIV. There is the heathen as opposed to the Christian A.; the A. of the crusades; the dark A.'s, the middle A.'s and the A. of steam. The progress of mental activity has been divided into the A. of the supernatural, the A. of the metaphysical, and the A. of the positive. Physiologically human life is divided into infancy, youth, manhood, and old A.; in which list some insert the A. of childhood, of boy or girlhood, or adolescence.

AG'ELNOTH, or ETHELNOTH, known also as ACHELNOTUS; son of Egelmaer, archbishop of Canterbury in the reign of Canute. A. exercised great and salutary influence over the headstrong monarch, both to prompt and to restrain, counselling the policy that finally united the Danes and Saxons to oppose the Normans. He also made peace in the church, and ended the persecution raging between the Benedictines and the secular clergy. He was made archbishop, and went to Rome in 1022 to receive the pall. On his return he purchased a relic, said to be the right arm of St. Augustine of Hippo. When Canute died he made A. promise to be faithful to his sons by Emma, and the promise was so well kept that Harold the usurper remained unconsecrated until after the death of A.

AGE'NOR, a fabulous king of Phœnicia, son of Neptune, twin brother of Belus; father of Cadmus, and some say of Europa. When Europa was carried off by Zeus, A. sent his sons to find her, with orders not to return until they had done so. She was not found, and the sons settled in various countries. Buttmann supposes A. to be the Canaan of Moses (Gen. x. 6).

AG'GERHUUS, or AKERSHUUS, a department in s.e. Norway, 2012 sq. m., pop. 164,804. The chief business is in iron, lumber, pitch, tallow and hides. The district has many small lakes, and the scenery is beautiful.

AGGLUTINATE LANGUAGES, the name given to the Turanian tongues, because the pronouns are attached (glued on) to the verbs, and prepositions denoting case in the same way attached to substantives.

AGGREGATION, STATES OF; the three states, solid, liquid and gaseous, in which matter occurs, depending upon the degree of cohesion that exists between the molecules or atoms of material bodies. In a solid state the molecules are fixed, and cannot be changed from their position without force; in the liquid state they move freely on each other, and the cohesion is so slight that the body has no fixed form; in the gaseous state they are affected by an elastic force that amounts to repulsion, tending to disperse them through increased space. A recent hypothesis, to which some facts seem to point, is that of a fourth state of matter, called "radiant," in which it is supposed to exist at a point as far beyond the gaseous as that is beyond the liquid.

AGLA'OPHON, a Greek painter, who lived about 500 B.C.; father of Polygnotus and Aristophon, also painters and his pupils. Quintilian praises A.'s pictures for simplicity of coloring. Another artist of the name, supposed to be a grandson, painted a portrait of Alcibiades.

AGME'GUE, or GAGMEGUE, a name of the Mohawk Indians. They called themselves by a word signifying "she-bear." The Algonquins called them Mahaquas, which the French made Moquis, Mohawks, or Mohocks. They were usually at war with the French of Canada; but the Dutch kept them friendly, making a treaty in 1818 that lasted until the old French war, when they did good service for the English in Canada. In the revolution they sided with the British, and under the famous chief Thayendenega, or Brant, did much damage to frontier settlements. Soon after the peace they migrated from their old home in central N. Y. to Canada, where a small remnant still exists. Their language has been elucidated in grammars by Bruyès and Marcoux; and Brant translated the prayer-book and parts of the bible into their tongue.

AGNES, SAINT, a Christian virgin, martyred by order of Diocletian, when about 15 years old. The legend is that her beauty excited the son of a prætor, whom she escaped, through miraculous blindness that fell upon him; and that his sight was restored in answer to her prayers.

AGNES SOREL, 1409-50; mistress of Charles VII. of France, and lady of honor to the queen, the virtuous Marie of Anjou, whose full confidence she long enjoyed. She had great influence over Charles, and is credited with rousing him from the lethargy into which he had fallen after the successes of Henry V. of England at Agincourt and elsewhere. Her death was sudden, and it is supposed that she was poisoned by the dauphin, afterwards Louis XI. She had three children by the king.

AG'NI, or AGNIS, the Hindoo god of fire, represented with two faces, three legs, and seven arms. He is of deep red color, and the faces are said to represent fire in its two elements, beneficent and destructive; the seven arms represent the primary colors. He bears incense to heaven, and appears to be a mediator between men and the gods.

AGNOËTÆ, a sect in the 6th c. which gave prominence to the statement that, in his human nature, Christ was ignorant of many things, especially of the time of the day of judgment. An earlier sect of the same name denied the omniscience of God.

A'GNOLO, BACCIO D', b. Florence, 1460; architect of the villa Borgherini, and of the campanile of the church of San Spirito, in that city. He was the first to use frontons, or frontispieces, for windows and doors in private buildings.

AGNO'MEN, among the Romans, a fourth name derived from some act, quality or event, as "Cunctator" added to Fabius, equivalent to "Fabius the delayer." Pliny "the younger" is also an instance.

AG OBARD, SAINT, 779-840; bishop of Lyons. He was deposed, in 835, for taking part in the rebellion of the sons of Louis *le debonnaire*; but on their reconciliation to their father, A. was restored to his place. He wrote against the worship of images, against witchcraft, dueling, and the Jews.

AGONIC LINE, the line of no variation of the magnetic needle. It passes from pole to pole in a curve differing widely from the meridian, as the aclinic line (line of no inclination or dip of the needle) differs from the equator. The A. L. varies in position, constantly traveling westward in unison with the magnetic pole, at a rate that might make a revolution around the earth in about 600 years. In 1580, the line ran through Sweden; in 1620, through Holland; in 1660, England; in 1700, the w. part of Ireland; it reached America in 1780, and now crosses the w. part of Ohio.

AGONIS'TICI, an ascetic sect of Christians in Africa in the 4th c., who believed in neither labor nor marriage. They were mostly low and ignorant, living by beggary, and courting violent death as martyrdom. They disappeared after an invasion of the Vandals.

AGOSTINO and A'GNOLO (or ANGELO) DA SIENA, brothers, architects and sculptors of Siena, who lived in the latter part of the 13th c. They studied under Pisano, designed the Palazzo de Novi, the church of St. Francesco, and the Porta Romana; and built the tomb of bishop Guido, after designs by Giotto; a noble piece of work, unfortunately destroyed by the French under the duke of Anjou.

AGOSTINO, PAOLO, 1593-1629; an Italian musician. He studied under Nanini, and was Ugolini's successor as the conductor of the pope's orchestra. He left many good compositions, of which an *Agnus Dei* for eight voices was greatly admired.

AGOULT, MARIE CATHERINE SOPHIE DE FLAVIGNY, Countess, 1805-76; a French authoress known by her signature of "Daniel Stern," daughter of vicomte De Flavigny. She was married in 1827; traveled in central Europe; wrote novels, 1841 to 1845, *Merce*, etc., which appeared in *La Presse* of Paris. In 1848, she became a political writer, and published a history of the revolution of that year, in which she favored the cause of the people. She wrote, also, *Three Days in the Life of Mary Stuart*, *Dante and Goethe*, etc. She had a daughter by Franz Liszt, who justified her musical paternity by marrying first Hans Von Bulow, and next Richard Wagner.

AGREDA, MARIA DE (CORONEL), 1602-65; the superior of the convent of the Immaculate Conception in Agreda, Spain. She reported that she had had revelations from heaven, and that God had commanded her to write an inspired life of Mary, the mother of Jesus. Such a book was published; but the church authority forbade the reading of it, and Bossuet pointed out some of its indecent portions.

AGRIC'OLA, CHRISTOPH LUDWIG, 1667-1719; a landscape painter, who traveled in England, Holland, and France, and lived some time in Naples. His works are noted for skillful representation of varied phases of climate. In light and color he imitated Claude Lorraine.

AGRIC'OLA (originally LANDMANN), GEORG, 1494-1555; mineralogist, and the first to raise the study into a science. He studied at Leipsic and in Italy. In Bohemia he practiced as a physician, and, in 1531, was made professor of chemistry in a mining district of Saxony, where he pursued his favorite study. He published *De Re Metallica*, which gives minute descriptions of mining processes.

AGRIC'OLA, JOHANN FRIEDERICH, 1720-74; a musical composer who studied under Bach. He was a superior organist, and held the office of kapellmeister under Frederic II. He wrote "Achilles" and other operas, and minor compositions.

AGRIC'OLA, MICHAEL, a Swedish scholar and reformer, who, in the latter part of the 16th c., translated the New Testament into the Finnish language.

AGRICULTURAL EDUCATION (*ante*). In the United States the West Point academy, established in 1802, was the first provision by the general government for scientific education in any department; the naval academy followed in 1845. Two years later, John P. Norton, agricultural chemist, just returned from Europe, agitated the question of agricultural schools, and one school was begun. In 1860, it was liberally

endowed by Joseph E. Sheffield, and is now attached to Yale college as the "Sheffield scientific school." In 1852, a legacy to Dartmouth college, by Abiel Chandler, laid the foundation of a similar branch at that college. Congress was repeatedly asked to set apart lands for the support of agricultural colleges, and a bill was passed in 1858 for that purpose, but the president failed to sign it. In 1862, the effort was successful, and a bill became a law appropriating about ten millions of acres to all the states, to be divided according to the number of representatives from each state in congress. Meantime, New York and other states kept the question alive, and Michigan opened her agricultural college in 1857; and now, under one or another name, nearly all the states have colleges or parts of colleges in which scientific agriculture is taught. On the 2d of July, 1862, congress passed an act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts, the amount of land to be equal to 30,000 acres for each senator and representative in congress to which the states were then entitled. To guard against the loss of this fund by improvident investment, the act provides that all moneys derived from the land granted shall be invested in stocks of the United States or of the state, or some other safe stock yielding not less than five per cent.; and that if any portion of the fund or the interest thereon shall be lost or diminished, it shall be replaced by the state, so that the capital shall forever remain undiminished, except that a sum not exceeding ten per cent. on the amount received by any state under the act may be applied to the purchase of lands for sites or experimental farms, whenever authorized by the legislature. The general object and character of the colleges to be established is briefly stated in the fourth section of the act, which provides that the interest of the fund shall be inviolably appropriated by each state which may claim the benefit of the act, "to the endowment, support, and maintenance of at least one college, where the leading object shall be (without excluding other scientific and classical studies, and including military tactics) to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." The states were not slow to avail themselves of these advantages, and the important interest of A. E. suddenly sprang into life. The last report on this subject at hand shows that in 36 states there were, 1876, 39 colleges which have received the congressional land grant of July 2, 1862. There were also branch institutions in Georgia and Missouri. The agricultural and mechanical college of Texas was opened during the year. All the colleges were in operation except that of Florida, which was expected to open early in 1877. In all these colleges the professors and assistants numbered 473, and the students 4211. Eleven states had not sold all the land scrip granted by congress. During the year 51,495 acres were sold at an average price of \$4.41 per acre, and 1,463,505 acres remained unsold. The largest average price per acre obtained by any one state was \$8.38 by Michigan, and the smallest \$2.20 by Iowa. The annual interest received by all the colleges for all the land sold amounted during the year to \$525,735. Thirty-four of the colleges had farms, which contained in the aggregate 15,418 acres, valued at \$1,321,092. The following table gives the names of the agricultural and industrial colleges and departments established in the United States up to 1877, with the number of students pursuing agricultural or mechanical branches:

INDUSTRIAL INSTITUTIONS IN THE UNITED STATES,

WHICH HAVE RECEIVED THE NATIONAL ENDOWMENT OF LAND SCRIP UNDER THE ACT OF JULY 2, 1862.

LOCATION.	NAME OF INSTITUTION.	PRESIDENT.	Profes- sors.	Stu- dents.
Auburn, Ala.	Agricultural and mechanical college of Ala.	I. T. Tichenor, D.D.	10	270
Fayetteville, Ark.	Arkansas industrial university.	Gen. D. H. Hill.	13	173
Berkeley, Cal.	Univ. of Cal.—colleges of agricul. and mech.	John Le Conte, M.D.	19	50
New Haven, Ct.	Yale college—Sheffield scientific school.	N. Porter, D.D., LL.D.	26	197
Newark, Del.	Delaware college.	W. H. Purnell, LL.D.	8	43
Eau Gallie, Fla.	Florida state agricultural college.	Wm. W. Hicks. ....	..	..
Athens, Ga.	Univ. of Ga., Ga. state coll. of agr. and mech.	{ Hy. H. Tucker, LL.D. }	11	61
Dahlgonega, Ga.	Univ. of Ga., North Georgia agricul. coll.		6	300
Urbana, Ill.	Illinois industrial university.	S. H. Peabody, PH.D.	26	416
Lafayette, Ind.	Purdue university—Indiana agricul. college.	Em. E. White, LL.D.	9	196
Ames, Iowa	Iowa state agricultural college.	A. S. Welch, LL.D.	21	245
Manhattan, Kan.	Kansas state agricultural college.	M. L. Wazel.	16	208
Lexington, Ky.	Kentucky univ.—agricul. and mech. college.	J. K. Patterson, PH.D.	7	118
Baton Rouge, La.	Louisiana state agricul. and mech. college.	Col. D. F. Boyd.	8	188
Orono, Me.	Maine state coll. of agricul. and mech. arts.	M. C. Fernald.	7	102
College Stat'n, Md.	Maryland agricultural college.	Wm. H. Parker.	8	81
Boston, Mass.	Massachusetts institute of technology.	Wm. B. Rogers, LL.D.	20	264
Amherst, Mass.	Massachusetts agricultural college.	Levi Stockbridge.	11	192
Lansing, Mich.	Michigan state agricultural college.	Th. C. Abbot, LL.D.	9	239
Minneapolis, Minn.	Univ. of Minn.—coll. of agr. and mech. arts.	Wm. W. Folwell.	8	6
Oxford, Miss.	Univ. of Miss.—coll. of agr. and mech. arts.	Alex. P. Stewart.	6	15
Rodney, Miss.	Alcorn university—agricul. and mech. coll.	H. R. Revels, D.D.	4	..
Columbia, Mo.	Univ. of Missouri—agricul. and mech. coll.	{ S. S. Laws, D.D., LL.D. }	8	19
Rolla, Mo.	Univ. of Mo.—Mo. school of mines and metal		5	70

INDUSTRIAL INSTITUTIONS IN THE UNITED STATES (*Continued*).

LOCATION.	NAME OF INSTITUTION.	PRESIDENT.	Profes- sors.	Stu- dents.
Lincoln, Neb.....	University of Neb.—college of agriculture...	E. B. Fairfield, D.D., LL.D.	5	13
Hanover, N. H.....	Dart. coll.—New Hamp. coll. of agr. & mech.	S. C. Bartlett, D.D., LL.D.	17	67
N. Brunswick, N. J.	Rutgers college—scientific school.....	W. H. Campbell, D.D., LL.D.	11	38
Ithaca, N. Y.....	Cornell univ., col. of agr.: Sibley col. of mech.	A. D. White, LL.D.....	53	84
Chapel Hill, N. C..	Univ. of N. Carolina.—coll. of agr. and mech.	K. P. Battle, LL.D.....	9	61
Columbus, O.....	Ohio agricultural and mechanical college...	Edw. Orton, PH.D.....	12	140
Corvallis, Ore.....	Corvallis college—state agricultural college.	B. L. Arnold.....	4	51
Center Co., Penn...	Pennsylvania state college.....	James Calder, D.D.....	21	161
Providence, R. I...	Brown univ.—agr. and mech. department...	E. G. Robinson, D.D., LL.D.	13	35
Orangeburg, S. C..	Clafin univ.—S. C. agr. coll. and mech. inst.	Edward Cooke, D.D.....	6	40
Knoxville, Tenn...	East Tennessee univ.—Tenn. agricul. college	T. W. Humes, S.T.D.....	12	58
Bryars, Tex.....	Agricultural and mechanical coll. of Texas...	Thos. S. Gathright.....	6	50
Burlington, Vt.....	Univ. of Vermont and state agricul. college.	M. H. Buckham, D.D.....	8	23
Blacksburg, Va....	Virginia agricultural and mechanical coll...	C. L. C. Miner, LL.D.....	10	255
Hampton, Va.....	Hampton normal and agricultural institute.	Saml. C. Armstrong.....	20	256
Morgantown, W. V.	West Virginia univ.—agricul. department...	J. W. Scott, LL.D.....	5	2
Madison, Wis.....	University of Wisconsin—college of arts.....	John Bascom, LL.D.....	16	124

The whole number of students pursuing agricultural or mechanical studies in the above institutions was 3354; the number of professors and assistants, including all the departments for the collegiate year, was 516; the whole number of students in all departments was 6723; the number of acres of land-scrip yet unsold, 1,463,505; annual income derived from government endowment, \$526,283; acres contained in the agricultural and mechanical college farms, 11,338; value of these farms, \$1,295,192.

AGRICULTURAL MACHINERY has within half a century risen from nearly nothing to the most important adjunct to the farmer, particularly since the application of steam. Taking cultivation in the order of time, we have hoes, spades, plows, and grubbers, in great variety of style and use; surface, subsoil and double-furrow plows. Then come seed-sowers and cultivators, in great variety; rakes, rollers, pulverizers and harrows; breast-plows, or turf-spades; trenching forks; many kinds of drills for sowing and planting seeds; manure spreaders, horse-hoes, turnip-thinners, etc. For harvesting, we have mowing, reaping and binding machines, shellers, fruit-pickers, etc.; hay-makers, horse-rakes, and greatly improved farm vehicles. After the crops are in, we have threshing and winnowing machines; straw cutters; cake (linseed) crushers; corn bruisers; grinding mills; apple grinders in cider presses; weighing machines, and a steaming apparatus for cattle food; and in the dairy, dog-power and other machine churns and hydraulic presses. A. M. is mentioned by Pliny (23 A.D.), who describes a cart used in Gaul with projections in front which cut or tore off the heads of grain, an affair probably something like the modern clover-header. Many efforts were made to build reaping machines in the early part of this century, but little useful was achieved until the time of Bell, Hussey and McCormick. These inventors began 40 to 50 years ago, and now their machines are in use all over the world.

AGRICULTURE, DEPARTMENT OF, established by congress in 1862, to collect and diffuse reports and information, distribute seeds, and manage a public botanic garden for testing and introducing to the country new and desirable plants. The commissioner of agriculture, who is the head, is appointed by the president. The D. of A. has a fine building at Washington, with a museum, chemical laboratory, gardens, etc. The monthly reports on the state of the crops and cognate subjects are estimated to be of great value.

AGRICULTURE, STATISTICS OF. The international statistical congress, which met at St. Petersburg in 1872, requested the French government to compile the agricultural statistics of the countries of Europe. Hitherto such statistics have been imperfect, or wholly neglected, and in no country are there to be found any data of the amount and value of staple crops. This serious defect the international statistical congress sought to remedy, and the statistical corps of France undertook to collect the facts. Though by no means complete, the information is valuable, and the leading points are: The average product of cereals of all sorts in Europe is estimated at 5,153,808,000 bushels, of which 1,657,392,000, nearly a third, are assigned to Russia; 766,260,000, or nearly 15 pr. ct., to Germany; 709,500,000, or 14 pr. ct., to France; and 557,600,000, over 11 pr. ct., to Austria-Hungary. Estimating the average consumption at 15.6 bush. per head for food, seed and manufactures. Europe produces usually about enough to meet her own demand, except in wheat and some other breadstuffs, in which a considerable deficiency is supplied by importation. Of potatoes, Ireland produces 23 bush. for each one of her population; German empire, 18.1; Holland, 14.5; Belgium, 11.6; France, 10.2; Scandinavia, 9.9; Austria-Hungary, 8.5; Russia, 4.5; Great Britain, 3.3; Italy, 1.1; Portugal, 0.85; Spain, 0.28, and other states still less.

LEADING AGRICULTURAL CROPS IN EUROPE.

COUNTRIES.	Date.	Total Area.	Land Tilled.	Bushels, Wheat.	Bushels, Rye.	Bushels, Barley.	Bushels, Oats.	Bushels, Potatoes.	Av. Wh't. p. Ac.
Austria.....	1871	74,110,173	22,273,312	35,945,699	74,407,428	46,234,017	91,486,987	178,429,626	15.6
Baden.....	1873	3,774,358	1,498,969	4,347,288	1,263,478	3,343,164	3,188,777	20,433,600	16.9
Bavaria.....	1873	19,860,648	7,666,407	21,626,587	24,550,562	117,501,814	25,897,914	59,778,270	29.2
Belgium.....	1873	7,278,872	3,926,704	24,682,369	13,367,392	3,365,090	21,777,248	60,803,441	27.9
Denmark.....	1871	9,448,691	3,434,925	.....	.....	.....	27,564,583	14,625,690	19.5
Finland.....	1870	93,371,255	1,931,659	53,922	9,024,840	4,994,880	4,852,980	7,095,000	17.8
France.....	1873	130,733,581	64,934,190	237,998,066	58,971,844	53,163,763	192,677,482	374,216,236	17.1
Great Britain	1873	57,623,333	18,317,276	104,512,354	1,779,426	91,513,013	123,248,640	86,293,261	29.9
Ireland.....	1873	20,811,357	5,283,928	3,871,032	178,510	8,385,154	57,058,502	124,509,204	23.0
Greece.....	1867	11,766,143	.....	5,102,894	123,009	2,059,506	200,128	18,390	13.5
Hesse Darm..	1873	2,072,512	1,043,620	278,138	2,259,660	3,179,908	2,729,146	15,251,505	29.0
Holland.....	1873	8,123,200	2,437,033	5,238,650	8,137,443	4,699,546	11,116,821	53,309,055	24.8
Hungary.....	1873	80,027,559	27,966,121	.....	.....	.....	41,374,609	126,520,764	12.6
Italy.....	.....	64,080,565	.....	107,381,080	8,740,887	13,321,218	.....	29,696,724	.....
Norway.....	1873	78,663,021	1,570,631	.....	.....	.....	9,633,196	18,847,584	23.3
Portugal.....	1865	22,508,508	4,551,400	5,684,696	6,240,450	1,985,663	568,449	3,785,041	13.2
Prussia.....	1867	85,788,437	.....	73,731,406	173,485,733	86,742,609	227,424,922	509,720,471	17.6
Roumania....	1873	29,893,638	8,656,770	.....	.....	.....	8,449,464	280,292	13.8
Russia.....	1870	1,268,890,822	.....	221,714,919	616,954,569	124,255,047	590,746,010	326,906,518	.....
Saxe Altenb..	1872	326,558	190,579	425,019	1,175,846	886,818	1,903,390	2,671,533	28.7
Saxe Weimar	1873	880,700	493,665	792,611	1,757,136	1,989,665	2,528,874	5,261,894	17.2
Saxony.....	1873	3,704,070	1,863,328	.....	.....	.....	3,969,845	41,304,494	27.0
Servia.....	1868	10,762,876	.....	4,086,720	510,840	3,065,040	510,540	.....	.....
Spain.....	1857	125,233,666	.....	117,563,372	25,511,775	58,471,962	.....	6,356,016	16.1
Sweden.....	1872	110,629,417	6,257,557	2,455,429	15,985,926	12,574,397	31,945,516	44,704,176	.....
Switzerland..	1868	10,234,802	.....	2,145,528	8,684,680	1,430,352	5,212,736	.....	.....
Turkey.....	1868	89,957,183	.....	40,867,200	10,216,800	25,542,000	3,065,040	.....	.....
Wurtemberg	1873	4,803,571	2,093,593	7,274,135	1,635,485	5,358,693	9,269,232	19,850,584	16.6
United States	1877	2,184,000,000	200,000,000	364,194,186	21,170,100	24,441,400	406,394,000	170,092,000	13.5

The production of crops of all kinds in the United States in 1873 is set down at 1,586,442,000 bushels, an aggregate nearly equal to that of Russia, which is 1,657,392,000 bushels. Europe produces a little over 17 bushels per head of her population; the United States, in 1873, almost 40 bushels per head. The value of agricultural exports of the United States in 1878 was \$592,475,813, which was 82 per cent of all domestic exports.

PRINCIPAL CEREALS OF THE UNITED STATES FOR EIGHT YEARS.

I.—INDIAN CORN.

YEARS.	Bushels.	Acres.	Val. Dollars.	Yield Acre.	Average Price	Value p'r Acre.
1870.....	1,094,255,000	38,616,977	\$601,839,030	28.3	\$0 54.9	\$15 57
1871.....	991,898,000	34,091,137	478,275,900	29.1	0 48.2	14 02
1872.....	1,092,719,000	35,526,836	435,149,290	30.7	0 39.8	12 24
1873.....	932,274,000	37,197,148	447,183,020	23.8	0 48.0	11 41
1874.....	850,148,500	41,036,918	550,043,080	20.7	0 64.7	13 40
1875.....	1,321,069,000	44,841,371	555,445,930	29.4	0 42.0	12 38
1876.....	1,283,827,500	49,033,364	475,491,210	26.1	0 57.0	9 69
1877.....	1,342,558,000	50,369,113	480,643,400	26.6	0 35.8	9 54
Total.....	8,908,749,000	332,742,864	\$4,024,070,860	.....	.....	.....
Annual average.....	1,113,593,625	41,592,858	\$503,008,857	26.7	\$0 45.1	\$12 09

II.—WHEAT.

1870.....	235,884,700	18,992,591	\$245,865,045	12.4	\$1 04.2	\$12 34
1871.....	230,722,400	19,943,893	290,411,820	11.5	1 25.8	14 56
1872.....	249,997,100	20,858,349	310,180,375	11.9	1 24.0	14 87
1873.....	281,254,700	22,171,676	323,594,805	12.7	1 15.0	14 50
1874.....	308,102,700	24,967,027	291,107,895	12.3	0 94.4	11 66
1875.....	292,136,000	26,381,512	294,580,990	11.0	1 00.0	11 66
1876.....	289,356,500	27,027,021	300,259,300	10.4	1 03.7	10 86
1877.....	365,094,800	26,193,407	395,155,375	13.9	1 08.2	15 08
Total.....	2,252,548,900	187,135,486	\$2,451,155,605	.....	.....	.....
Annual average.....	281,743,612	23,391,936	\$306,394,451	12.0	\$1 08.8	\$13 09

OTHER GRAINS.—AVERAGE FOR SAME EIGHT YEARS.

Oats.....	259,683,990	10,613,527	\$111,034,139	27.9	\$0 34.8	\$10 56
Barley.....	31,814,724	1,477,809	25,032,158	21.5	0 78.8	16 97
Rye.....	16,890,950	1,225,307	12,543,888	13.7	0 75.2	10 33
Buckwheat.....	9,010,737	524,755	6,927,429	17.1	0 75.8	13 20
Potatoes.....	127,827,337	1,410,836	74,290,614	88.7	0 58.1	52 44

The crop of hay for 1877 showed the amounts—31,629,300 tons, 25,367,708 acres,

\$271,934,950 value, one ton and twenty-four hundreds yield per acre, \$8.60 average price, \$10.72 value per acre.

AGRIONIA, Boeotian festivals in honor of Dionysius, in which women pretended for some time to search for the god, but suddenly desisted, saying that he hid himself among the muses. The tradition is that the daughters of Minyas having despised the rites of the god, were seized with frenzy and ate the flesh of one of their children; and that the A. were celebrated in expiation of the offense.

A GUA, VOLCAN DE, a conical volcanic mountain, 25 m. s.w. of Guatemala, 15,000 ft. above sea-level. Its crater is about 450 ft. by 350 ft. It ejects stones and hot water. Near by are the volcanoes of Pacaya and Fuego, and the three often present a magnificent spectacle. Agua has twice destroyed the old town of Guatemala.

AGUILAR, GRACE, 1816-47; an English authoress of Hebrew parentage, and a writer chiefly of religious fiction, such as *The Martyr and Home Influence*. She wrote in defense of her faith *The Spirit of Judaism*, and other works. The "Women of Israel" gave her a testimonial shortly before her death.

AGUIRRE, or AGUIRRA, JOSÉ SAENZ DE, 1630-99; a Spanish ecclesiastic and author, of the Benedictine order; abbot of St. Vincent, professor of theology in the university of Salamanca, and secretary to the Spanish inquisition. He was made cardinal about 1686, in reward for a work in which he supported the papal authority against the four articles of the Gallican church. He wrote a *Collection of the Councils of Spain*, and left unfinished a *Treatise on the Theology of Anselm*.

AGUIRRE, LOPE DE, a Spaniard of the 16th c., noted for his crimes. He went to Peru with Orsua in search of the mythical El Dorado; induced Orsua to assume kingly authority, and then killed him to seize the power, afterwards killing many who displeased him. He was finally deserted, and captured and executed by the Spanish authorities of Venezuela.

AGUSTINA, the "maid of Saragossa," d. June, 1857, at a great age. In youth she was a peddler of cool drinks to soldiers. During the siege of Saragossa by the French, in 1809, she distinguished herself by heroic participation in several severe encounters, once snatching the fuse from a falling cannonier and firing the gun at the enemy, from which act she got the name "La Artillera." She was made sub-lieut. in the Spanish army, and presented with many decorations. Byron immortalized her in *Childe Harold*.

AGYNIA'NI, or AGYNIANS, a Christian sect at the end of the 7th c., who condemned marriage, and declared a true Christian life to consist of the renunciation and mortification of all physical appetites and passions.

AIAN'TA, a portion of the gold coast of Africa, rich and fertile. England has stations at Axim and other places ceded by the Dutch in 1788. Prussia undertook to colonize A. in 1683, but in 1718 sold out to the Dutch West India company.

AAHAZ, son of Jotham, and 11th king of Judah, reigning 741-725 B.C.; weak-minded and corrupt. In his time Pekah, king of Israel, and Rezin, king of Syria, undertook to capture the kingdom of Judah, and besieged Jerusalem but did not take the city, though they carried away many captives. Incursions were made by the Edomites and Philistines, and Ahaz asked help of Tiglath-Pileser, king of Assyria, who drove out the invaders but took heavy toll from Ahaz, compelling him to appear at Damascus as a vassal, while his kingdom was brought to the lowest point of political degradation. The conduct of Ahaz was that of a heathen; he broke up the sacred vessels, and closed the doors of the temple; he sacrificed to Syrian deities, and caused his son to pass through the fire to Molech. He was succeeded by his son Hezekiah.

AAHAZIAH, son and successor of Ahab, and 8th king of Israel, reigning less than two years, 897-96 B.C. He followed his father's idolatry, worshiping Baal and Astarte. On his accession the Moabites first revolted, refusing to pay tribute; and before he was ready to go against them he fell from a window of his palace. He sent messengers to his god to know the result of his injuries; but the messengers met Elijah, the prophet of Jehovah, who sent them back with word that the king would surely die.

AAHAZIAH, son of Jehoram and Ahab's daughter; 6th king of Judah; reigned one year, 885 B.C. He was idolatrous and wicked, and was slain by Jehu.

AHIMELECH, a Jewish high-priest, who, induced by David, supplied the latter's hunger with the shew-bread of the tabernacle, which was forbidden except to the priests; for which Saul caused Doeg to slay A.

AHITH'OPHEL, probably grandfather of Bathsheba, and by her introduced at David's court. He was a wise man in spite of his name (which means "brother of foolishness"), and David's most trusted counselor until his defection in Absalom's case, which caused the king much sorrow. His advice showed the way of success to Absalom's party, but Hushai's counsel for delay prevailed, which A. believed would be fatal to the rebel cause; and he went home, "put his house in order and hanged himself," the only deliberate suicide recorded in the Old Testament.

AHL'EFELD, CHARLOTTE SOPHIE LOUISE WILHELMINE VON, 1781-1849, a German novelist. She married A. 1798, and separated from him in 1807. She was praised by

Goethe for her precocious literary talent. She published several sentimental novels under the name of "Eliza Selbig," and others under her real name, and wrote a volume of poems.

AHL/FELD, JOHANN FRIEDRICH, b. 1810, a Lutheran pulpit orator of St. Michael's church, in Leipsic. He has published several volumes of sermons.

AHLQUIST, AUGUST ENGELBERT, b. 1826, a Finnish philosopher and poet, professor of Finnish literature at Helsingfors. He is distinguished for ethnographic investigations, especially of the dialects and races of the Uralo-Altaic family. He wrote a grammar of the nearly extinct Wot language. In 1847, he started a Finnish journal, and he has translated some of Schiller's works into Finnish, and written poems.

AHLWARDT, THEODOR WILHELM, son of Christian Wilhelm A., the Hellenic philosopher. Since 1861, he has been professor of oriental languages in Griefswalde university. He is an authority on Arabic literature and history.

AHMED SHAH, b. about 1724; hereditary chief of the Abdali tribes, and founder of the Durrani dynasty of Afghanistan. While a boy he was a prisoner with a hostile tribe, but in 1738 he was rescued by Nadir Shah, who gave him command of a body of cavalry. On the assassination of Nadir, in 1747, Ahmed, who had failed to capture a Persian treasure train, retreated to Afghanistan and persuaded the native tribes to make him their sovereign. He was crowned at Candahar, Oct., 1747, changing the name of his tribe to the Durrani. By keeping his armies at work in foreign conquests, and interfering but little in the local affairs of the tribe, he soon consolidated his power; and having acquired the koh-i-noor—the famous diamond—and much captured treasure, he had the advantage of great wealth. In 1748 he took Lahore, and in 1751 became minister of the Punjab, and soon subdued all Kashmir. The great mogul having retaken Lahore, he went against him in 1756, entered Delhi in triumph and gave the city to pillage for a month. He took for one of his wives a princess of the royal family, and gave another to his son Timour, whom he made governor of Punjab. He had scarcely left Delhi when the Mohammedan vizier, whom he had left in office, seized the city, killed the great mogul, and set another of the family, a tool of his own, on the throne. At the same time the Mahratta chiefs took occasion for attempts to establish the Hindoo power, and Ahmed had more than once to cross the Indus on war expeditions. Jan. 6, 1761, he defeated the Mahrattas and Sikhs at the great battle of Panipat, but was compelled to hasten back to quell rebellion at home. The Sikhs rose, and he was finally forced to give up the Punjab. He died in 1773, of cancer in the face, and was succeeded by his son Timour.

AHMED VEFYK PASHA', a Turkish statesman; in 1877 the president of the chamber of deputies. He has been much connected with foreign affairs, especially in negotiations which concerned Russia; and he was ambassador to France in 1860. In the autumn of 1877 he was appointed governor of Adrianople.

AHN, JOHANN FRANZ, 1796–1865: a German grammarian, for many years a teacher in Neuss. He wrote many manuals for teaching German and other languages, and published in English a collection of German poetry. His *Practical Method for a Rapid and Easy Acquisition of the French Language* has passed through many editions.

AHRENS, HEINRICH, b. 1808; a German writer on law, philosophy, and psychology, who studied at Gottingen. He was concerned in the political troubles in 1831, lectured in Paris, and from 1834 was 14 years professor of philosophy at Brussels. He was a member of the Frankfurt parliament of 1848, and on the committee to draft a new German constitution. For a few years afterwards he held a professor's chair at Gratz, and for the last twenty years has represented the Leipsic university in the first Saxon chamber. Among his works are a *Course of Psychology and Philosophy of Rights; or Natural Rights on a Philosophico-Anthropological Basis*. The last-named work has been republished in several languages, and as an academical text-book in some South American states.

AI', a royal city of the Canaanites, 12 m. n. of Jerusalem. It existed in the time of Abraham, but is chiefly noted for its destruction by Joshua, who made it "a heap forever, even a desolation." A city which seems to have occupied the site is supposed to have been mentioned in Isaiah, and also after the captivity. Its ruins were said to exist in the time of Eusebius and Jerome, though none are now to be found.

AIDONE, a t. of Sicily, in the province of Caltanissetta, 20 m. e. by s. from Caltanissetta. It crowns the summit of a lofty height commanding a view of the great plain of Catania. It was one of the settlements of the Lombards, who accompanied Roger the Norman in his conquest of Sicily. The road which leads to the t. is very rugged, bordered by luxuriant prickly-pears. Pop. 5920.

AIGUEBELLE, PAUL ALEXANDRE NEVEUE D', b. 1831; a French naval officer. He entered the service in 1840; was lieut. in 1858, and went into the Chinese service, where he distinguished himself against the Taepings in 1862–64. He became chief commander of the Franco-Chinese corps, forced the insurgents to fly from several ts., and captured Hong Chow. He was made a mandarin of the first class in China, and an officer of the legion of honor in France. With M. Gicquel he established the arsenal at Foo-chow-foo,

and taught the Chinese to construct European vessels, the first Chinese man-of-war being launched under his supervision in 1869, when he was made grand admiral of the Chinese fleet.

AIGUILLON, ARMAND VIGNEROT DUPLESSIS RICHELIEU, Duc de, 1720-82; minister of foreign affairs under Louis XV., governor of Brittany in 1758. He was replaced as minister by Vergennes, and retired to private life. It is supposed that he owed his place at court to the king's mistress, Mme. Dubarry.

AIKEN, a co. in S. C., formed in 1873; 900 sq.m. on the e. side of Savannah river; pop. '80, 25,323. There are mineral products, and agriculture and manufactures of cotton, paper, and pottery are the chief occupations. Co. seat, Aiken.

AIKEN, a t. in A. co., S. C., 17 m. from Augusta, on the S. C. railroad; a favorite resort for pulmonary invalids, being 600 ft. above sea-level. It has wide and fine streets, churches, newspapers, lyceum hall, reading-room, and numerous hotels and boarding houses. Pop. '80, 1814.

AIKEN, CHARLES AUGUSTUS, D.D., LL.D., a native of Vt., b. 1827; graduated at Harvard 1846, and in theology at Andover in 1852. He was pastor of a Congregational church in Yarmouth, Me., 1854-59; latin professor at Dartmouth in 1859, and at Princeton in 1866-69; president of Union college 1869-71; and later, professor of Christian ethics in Princeton theological seminary. He is editor of *The Book of Proverbs* in Lange's commentary, and author of many articles in religious periodicals.

AIKIN, ARTHUR, 1773-1854; son of Dr. John A. He published *Journal of a Tour through North Wales and Shropshire*, edited the *Annual Review*, 1803-8, and with his brother Charles published a *Dictionary of Chemistry and Mineralogy*. Subsequently he prepared a manual of mineralogy. He was one of the founders of the geological society, and a fellow of the Linnæan society.

AIKIN, JOHN, 1747-1822; an English author and editor. He studied medicine and surgery under the celebrated Dr. Wm. Hunter, but tried practice in various places without success, and turned his attention to literary pursuits, in which he was assisted by his sister, Mrs. Barbauld, with whom he published a series of volumes entitled *Evenings at Home*, an instructive and entertaining miscellany for the young. He wrote also *The Natural History of the Year*, a valuable *Biographical Dictionary*, and other books; edited the *Monthly Magazine* from 1796 to 1807, and started the *Athenæum*, which soon stopped.

AIKIN, LUCY, 1781-1864; daughter of John A.; a historical writer who greatly assisted her father. She wrote books for the young, such as *Adventures of Ronaldo and Lorimer*; also published poems under the title of *Epistles to Women*. Her most important work is *Memoirs of the Court of Elizabeth*, which went through several editions. One of her latest works was *Memoirs of Addison*. She was one of the most accomplished and attractive women of her time.

AIKMAN, WILLIAM, 1682-1731; a Scottish painter who traveled in Italy and Turkey, practiced his art in Edinburgh and London, and was on intimate terms with artists and men of letters.

AILANTHUS SILKWORM, *samia cynthia*, found on the leaves of the ailanthus, on which it feeds. Its silk is much used in China, and some think that it may supersede the true silk, the worm being hardier and less subject to disease, and feeding on a tree grown in all temperate climates. The eggs are treated like those of the regular silkworm; the larvæ, after feeding through the first moult, being placed on the trees and left to themselves.

AILLY, PIERRE D', or PETRUS DE ALLIACO, 1350-1425; a French theologian called the "hammer of heretics" and "eagle of doctors;" leader of the Nominalists, and early a doctor of the Sorbonne; grand master of the college of Navarre in 1384, and in 1389, chancellor of the university; bishop of Cambray in 1398; confessor and almoner to Charles VI. He induced the calling of the council of Pisa, of which he was an active member. He was made cardinal by John XXIII., and sent legate to Germany, where he was prominent in the council of Constance, 1414-18, furthering the condemnation of Huss and Jerome of Prague, but strenuously advocating reform in the church; maintaining the authority of councils over that of popes, and aiding in the election of Martin V. in place of three rival popes. He was afterwards papal legate to Avignon until his death. His writings are numerous. Among them is an attempt to harmonize astronomy and theology, the astronomy being that of the age, soon to be overturned by Copernicus and Galileo.

AILRED, EALRED, ETHELREDUS, or ALURED, an English ecclesiastic and historian. He was educated at the Scotch court, entered the Cistercian order and became a monk in Rievaulx abbey, in Yorkshire, becoming abbot in 1146, and remaining so till his death. He was the author of many historical and theological works, the former of little value owing to his unlimited credulity. Leland says he saw A.'s tomb at Rievaulx adorned with gold and silver ornaments.

AILURUS FULGENS. See PANDA, *ante*.

AIMARD, GUSTAVE, b. 1818, a French novelist. He went to America as cabin-boy, and lived ten years among the Indians; traveled in Spain, Turkey, and the Caucasus, mixing in wars and conspiracies. In 1848 he was in Paris, and an officer of the *garde mobile*. A. has published his adventures in a long series of novels, *The Trappers of the Arkansas* and *Nights in Mexico*, etc. Under a fictitious name he published, in 1847, *Un Coin du Rideau*.

AIMÉ-MARTIN, LOUIS, 1781-1847; a native of Paris, who in 1815 was appointed editing secretary to the chamber of deputies, and not long afterwards professor of belles-lettres, moral philosophy, and history in the polytechnic school. In 1831, he became keeper of the library of Sainte Genéviève. In 1810 he published *Lettres à Sophie sur la physique, la chimie, et l'histoire naturelle*, in prose and verse; and afterwards the *Life of Bernardin de St. Pierre*, in the literary style of his celebrated subject. But his most valuable work is *Éducation des mères de famille*, showing that the only way to improve mankind is to educate women so that they may be able to raise up men of virtue. His wife, a daughter of the marquis of Belleport, was the widow of Bernardin de St. Pierre, whom she took for her husband in his 63d year, she being 18. She died in the same year with her second husband, bequeathing her fortune to Lamartine, with whom she was a special favorite.

AIMON. See **AYMON**, *ante*.

AINOS, a race of men inhabiting Yezo, Saghalien, and the Kurile islands, numbering in all 20,000. They are of short stature, thick-set, with bushy black hair, beards, and eyebrows. Though living in Japanese territory, they approach the Caucasian type of humanity, having eyes set at right angles to the nose, and speak in a language having no affinity with the Japanese. They have attracted great attention through the many descriptions of them, often fanciful and exaggerated, by writers who call them the "Hairy Kuriles," and as likely to furnish the long-desired evolutionary link between the hair-clad beast and smooth-skinned man. As matter of fact, their bodies are not, as a rule, more hairy than those of men of the Anglo-Saxon race. The A. are fetish-worshippers, and in disposition are mild and tractable. They have no written language, as closet-scholars and many encyclopædias assert. They are probably the aborigines of Japan. The mikado's government is now civilizing them in schools and on farms, and American missionaries have entered among them. See *The Mikado's Empire*, *Reports of Horace Capron and his Assistants*, Tokio, 1875; *Transactions of the Asiatic Society of Japan*; and *Sunday Magazine*, N. Y., May, 1879.

AINSWORTH, HENRY, 1560-1623; an English scholar and divine. Tradition says that he was a Roman Catholic, and his younger brother John a Protestant; that the two entered into a written controversy, reciprocally converted each other, and each embraced the other's religion. Henry was driven from England by proscription and lived in poverty in Amsterdam about 1598. There he became a doctor or teacher in the first church of the sect called Brownists. Though never forward, he was the most steadfast, resolute, and cultured champion of the principles of civil and religious freedom represented by the nonconformists in Great Britain and America. While fighting for freedom from hierarchal tyranny A. pursued his Hebrew studies, and for a long time biographers had two Henry A.'s, one the learned rabbinical student, the other the arch-heretic and leader of the Separatists; but the two were one man. His most notable work is *A Defense of the Holy Scriptures; Worship and Ministry used in the Christian Church separated from Anti-Christ, against the challenges, cavils, and contradictions of M. Smythe*. He wrote notes on all the books of the Pentateuch, the Psalms, and Solomon's Song. There is a story, not probable, that he was poisoned by Jews.

AIN-TAB, a t. of Syria, near the source of the Kowek; an affluent of the Euphrates, 59 m. n.n.e. from Aleppo. It is tolerably well built: the houses are mostly of stone. It is well supplied with water, pure streams of which flow constantly through the streets. It has a castle built upon a mound, resting on rock, and of very striking appearance. The chief trade is in hides and leather; but cotton, sheep's and goat's wool, wax, wheat and rice are also of commercial importance, being chief articles of produce in the surrounding district. A. is supposed by some to be the ancient *Antiochia ad Taurum*. Pop. 20,000, composed of Turks, Greeks and Armenians.

AIRAY, HENRY, D.D., d. 1616; a Puritan preacher, and president of Queen's college, Oxford. When first a student he was poor, and did servile work in the college; but he rose in station, took orders, and became a frequent and zealous preacher, a thorough Calvinist and a fiery opponent of Romanism. In 1606 he was vice-chancellor of the university, and was also rector of Otmoor. He was a good specimen of the more cultured Puritans.

AIRE, or **AIRE-SUR-L'ADOUR**, (anc. *Vicus Julius*), a t. of the dep. of Landes, France, on the left bank of the Adour, 76 m. s. from Bordeaux. It is a bishop's seat; and its cathedral, which has been often destroyed and rebuilt, is one of the most ancient in France. A. has been a place of consequence from the days of the Roman conquest of Gaul, and was the capital of the Visigoths under Alaric, but is now much decayed, and diminishing in population. It has hat manufactories and tanneries. Pop. '72, 2576.

AIRE, or **AIRE-SUR-LE-LYS**, a t. of the dep. of Pas-de-Calais, France, on the Lys, 30 m. s.e. from Calais. It is a fortress of the third class; the t. well built, but its situation low and marshy. The barracks are capable of containing 6000 men. There are manufactures of woollen stuffs, linen yarn, thread, hats, starch, Dutch tiles and soap; also some trade in grain. Osier-work is carried on to some extent. Pop. '76, 5058.

AITKIN, a recently organized co. in e. Minnesota, intersected by Snake river and by the Northern Pacific railroad; 950 sq.m.; pop. '70, 183. The s.w. portion is occupied by about one half of the lake of a Thousand Islands.

AITON, **WILLIAM**, 1731-93; a Scotch botanist. He was trained as a gardener, and in 1754 became assistant to Philip Miller, superintendent of the garden at Chelsea. In 1759 he was made director of the botanical garden at Kew, and held the place until his death. His skill and care were of great service to this important scientific establishment. In 1789 he published his *Hortus Kewensis*, a catalogue of the plants in the great garden, with plates. This was re-edited by his son and successor in office.

AITZEMA, **LIEUWE VAN**, a Dutch author whose *History of the Netherlands* from 1621 to 1668 is valuable for original documents. He was an active politician, and agent of the Hanse towns at the Hague.

AIZANI, or **AZANI**, a city in Phrygia, mentioned by Strabo. In 1824 its remains were found by the earl of Ashburnham about 30 m. s.w. of Kutaieh. There was a temple of Jupiter, a theater, a stadium, and gymnasium; the theater is in good preservation—its long diameter 185 ft.; it had 15 rows of marble seats. The Rhyndacus (now Adranus) rises near the site of A. and passes through it; it was crossed by two white marble bridges, each of five semicircular arches. Tombs, Roman, coins, and inscriptions have been found.

AJALON, a town in ancient Palestine, 14 m. n.e. of Jerusalem, in the tribe of Dan, also spoken of as belonging to Ephraim, Benjamin, and Judah. It is noticeable only as the recorded place where Jeshua commanded the moon to stay its course till he had finished his battle. The modern town is Yalo.

AJEHO', or **ASHEHOH**, also called **ALCHUKU**, a city of Manchuria in the Chinese empire; 30 m. s. of Soongaree and 120 m. n. of Kirin. A. is in a fertile region, abounding in grain. The people of the district are exclusively Chinese immigrants, who get the soil at a nominal price on agreeing to reclaim and cultivate it. Pop. about 40,000, of whom a considerable number are Mohammedans.

AJURUOCA, town of the province of Minas Geraes, Brazil, 100 m. n.w. from Rio de Janeiro. It is situated in a fertile country, at the northern base of the Sierra Mantiqueira, on the river Ajuruoca, one of the head-waters of the Parana. The surrounding district once yielded much gold, which has apparently been exhausted; but it produces excellent crops of tobacco, millet, mandioc, sugar and coffee. Swine are reared for the market of Rio de Janeiro. Pop. (including district) about 12,000.

AK'ABAH, a village near the gulf of A., on the e. arm of the Red sea, supposed to occupy the site of the Elath of scripture. Ruins in the sea a short distance to the s. still bear the name Ezion-geber. In remote ages A. enjoyed a large trade.

AK'ABAH, **GULF OF**, the Sinus Ælaniticus of antiquity; the eastern of the two divisions of the n. end of the Red sea, running into Arabia Petraea about 100 m. n.n.e., with a width of 12 to 17 m. Navigation is difficult on account of reefs and sudden squalls. The only good harbor is Golden Port, on the w. shore, 33 m. from the entrance and 29 m. e. of Mt. Sinai.

AKERBLAD, **JAN DAVID**, 1760-1819; a Swedish archæologist, learned in Runic, Coptic, ancient Egyptian and Phœnician literature. He was secretary of the Swedish embassy to Constantinople, whence he went to Jerusalem and the Troad in 1792-97. He was also ambassador at Paris. His last years were spent in Rome, where he was sustained by a pension from the duke of Devonshire.

AKERS, **BENJAMIN PAUL**, 1825-64; an American sculptor. He began life as a printer, but in 1849 opened a studio in Portland, Me., and made busts of Longfellow and others. In 1851-52 he went to Italy, and on his return made a statue of "Benjamin in Egypt," which was exhibited in the New York crystal palace in 1853. He went to Rome in 1855, remaining three years, producing "Una and the Lion," a statue of "St. Elizabeth of Hungary," the "Dead Pearl Diver," and an ideal head of Milton, which last two are described in Hawthorne's *Marble Faun*.

AKHALZIKH', or **AKISKA**, a t. of Russian Armenia, 90 m. w. from Tiflis, on the left bank of the Dalka, an affluent of the Kur. It is situated in a valley of the Keldir mountains, and at such an elevation above the sea that the winter is severe, although the summer is very hot. A. was anciently called Keldir or Chaldir. It is without walls, but has a strong citadel, built on a rock. The mosque of Sultan Ahmed, built on the model of St. Sophia, in Constantinople, has a library attached to it which was accounted one of the most valuable in the east, but the Russians, after acquiring possession of A., carried off great part of its most valuable treasures to St. Petersburg. Maize, wheat, barley, flax, cotton, silk, grapes, figs, and honey are produced in the surrounding district. Some manufactures are carried on in the town, and it maintains an active trade with various places on the Black sea. Pop. '67, 15,977, two thirds of whom are Armenians.

AK-HISSAR (anc. *Thyatira*), a town of Asia Minor, in Anatolia, 52 m. n.e. from Smyrna, on somewhat elevated ground in the valley of the Hyllus. The streets are paved with carved stone, and other relics of antiquity abound; but there are no ruins of ancient buildings. Cotton goods are exported. Pop. estimated at 10,000, of whom two thirds are Turks and the remainder mostly Greeks.

AKHLAT, or **ARDISH**, a t. of Asiatic Turkey, in the vilayet of Van, and 58 m. n.w. from Van. It is situated on the n.w. shore of lake Van, and is surrounded by a double wall and moat, and further protected by towers and a citadel. Pop. estimated at 6000. The old city of A., at a little distance from the present t., in a ravine, was the residence of the kings of Armenia, and was the scene of many conflicts between the Greeks, Armenians, and Persians. It was taken and devastated in 1228 by Jelal-ud-deen, and completely destroyed by an earthquake in 1246.

AKHOOND OF SWAT, **THE**, a Mohammedan saint (d. 1878), who exercised great influence and had almost unquestioned authority over Mohammedans in the east, reigning supreme as the guide and director of the hearts of men all over high Asia. His residence was the resort of pilgrims, who came as many as 300 in a day, from Bengal, Bokhara, Constantinople, Persia, Tunis, and even Mecca, to consult him on questions of every kind. For half a century the English E. India government was assiduously watching this man, who possessed a power which no other person in Asia could pretend to wield; but the A. generally kept on friendly terms with the English. In 1877, the Ameer of Afghanistan sought his advice in regard to the proper course in the Russo-Turkish war.

AKHTYRKA, a t. of European Russia, in the government of Kharkov, and 58 m. n.w. from Kharkov. It is situated on a small river of the same name, an affluent of the Dnieper. It was founded by the Poles in 1641. It has manufactures of light textile fabrics, and a great annual fair. The neighborhood is very fertile. Pop. '67, 17,411.

AK'IBA, **BEN JOSEPH**, a famous rabbi and teacher of a large school at Jaffa in the 1st or 2d c., said to have had at one time 24,000 pupils. He was in the great Jewish revolt against Rome, taking the side of Bar-Cochba, or Bar-Cochebas, the pretended Messiah, and acted as his sword-bearer. He was taken prisoner by the Romans, and it is said that he was flayed alive, but bore his pains with wonderful fortitude. He is reported to have been 120 years old at death. Jews were long accustomed to visit his tomb, and his is one of the names of ten martyrs still found in a Hebrew penitential prayer. The traditions concerning him are numerous; and many unfounded statements have been made, one of which even identifies him with Bar-Cochba.

AKMOLINSK, a province of Siberia, organized 1868. It is composed of three of the five districts into which the Siberian Kirghiz was formerly divided, with part of the domain of the Siberian Cossacks, and the t. of Omsk and Petropaulovsk. Capital, A., 300 m. s.w. of Omsk. Pop. of province, '67, 4800.

AKO'LA, a t. in India, on the Nagpur extension of the great Indian Peninsular railway, in 26° n. and 76° 2' e.; pop., '69, 12,236. There are in the t. some rich merchants, and two markets are held each week. Besides the ordinary public buildings there is one English church. A. is the headquarters of the district of the same name.

AKRON, a t. of the state of Ohio, N. America, the capital of Summit co. It is situated 36 m. s. of Cleveland, on the Little Cuyahoga, which falls into lake Erie, and at the junction of the Ohio and Erie canal with the Pennsylvania and Ohio canal, at the highest point in the course of the former canal, whence its name (Gr., a summit). It is also on the Cleveland and Zanesville railway. It was first settled in 1825. It has woolen factories, flour-mills, a steam-engine factory, a stove factory, etc. The machinery of all its public works is driven by water-power. It is a place of considerable trade. Pop. '80, 16,462.

AK-SHEHR (*white city*, anc. *Philomelion*), a city of Asiatic Turkey, in the pashalic of Karaman, five m. s. of the salt lake of Ak-shehr, at the entrance of an extensive mountain valley. The houses rise in successive terraces on the slope of a hill. There is here a celebrated carpet manufactory. Pop. estimated at 6000.

AK-SU, a t. of eastern Turkestan, 260 m. n.e. from Yarkand, on an affluent of the Tarim, and on the southern base of the Thian-shan mountains. It was formerly the residence of the kings of Kashgar and Yarkand. While eastern Turkestan formed part of the Chinese empire it was an important garrison t. In 1867 it was captured by the Atalik-Ghazee. In 1716 it was nearly destroyed by an earthquake, and in the beginning of the present century suffered terribly from an inundation. It is celebrated for its manufactures of cotton cloth and saddlery. It is much resorted to by caravans as an entrepôt of commerce between Russia, Tartary, and China. The pop. is very variously estimated from 6000 to 20,000 and upwards. Sheep and cattle are extensively reared in the neighborhood. See **TURKESTAN, EASTERN**.

AKYAB, a t. of Further India, the chief sea-port of the district of A. or Aracan proper, and the capital of the province of Aracan. It was formerly called Twet-twe, and sometimes still receives that name. It is situated on the eastern side of the island of A., at the mouth of the Kuladyne or Coladyne. The houses are well built, the streets broad

and regular. The t. is rapidly rising in commercial importance. Light-houses have been erected for the benefit of the harbor. Pop. '72, 19,230.

AL, IL, or UL, the only article in the Arabic language. When before a lingual or dental the sound of the *l* is dropped, the following letter taking a double force, as "Il shams" (the sun), pronounced "ish shams." When the word preceding the article ends with a long vowel, the *a* in A. is dropped and the *l* joined to the vowel sound: Example, "Abu il Feda," pronounced "Abulfeda."

ALABAMA (see *ante*), one of the southern states of the American union, w. of Georgia, n. of Florida and the gulf of Mexico, e. of Mississippi, and s. of Tennessee, between 31° 30' and 35° n., and 85° and 88° 30' w.; in length from n. to s. about 336 m., and with an average width of 175; area, 50,722 sq.m. The earliest explorers in the region were Frenchmen under the Sieur de Bienville, and between 1702 and 1713 they founded a permanent settlement near the site of Mobile. Long wars with the native tribes make up what A. has of history until the cession in 1763 of all the territory, except the small corner around Mobile bay, to England by France. On the treaty of peace which secured the independence of the colonies, England ceded the territory to the new government, and soon afterwards the several states ceded their vast western domains to the federal government. By the purchase of Florida in 1819, the United States extended their southern border to the gulf of Mexico and the Atlantic, and the purchase of Louisiana in 1803 had spread our territory across what was then believed to be the great American desert almost to the shores of the Pacific. In March, 1817, the settlers around the bay of Mobile and along the river organized as a territory, and on the 14th of Dec., 1819, 20 years after Washington's death, the territory was admitted as a state, adding the twenty-sixth star to the national flag. During the war with England in 1812-15 the Creek Indians, then a powerful tribe inhabiting northern Alabama, gave the white settlers much trouble: in one instance, Aug. 30, 1813, capturing a fort and killing nearly 400 persons who sought refuge there. A large force under gen. Jackson at once marched after the Creeks, and followed them so continuously that within a year and a half they had lost more than 2000 warriors, and were glad to make peace. In 1832 the Creeks and other tribes sold their lands to the federal government and moved to their present home in the Indian territory.

"Alabama" is an Indian word or phrase, and signifies "rest," or "here we rest," probably having application to the sluggish and sleepy aspect of the main river, in its lower portion. When admitted as a state A. had a population of 127,901: 85,451 whites, 41,879 slaves, and 571 free colored. There were also a great many Indians of whom no census was made; but in 1870 there were only 98 aborigines in all the state. A. is much varied in surface; the northern part is broken by the spurs and isolated peaks of the Alleghanies; the central portion is uneven, but not remarkably hilly; the southern section for about a hundred m. from the gulf is nearly a uniform level, having a high alluvial soil easily cultivated and particularly favorable for fruits, cotton, and corn. Near the gulf the main timber is cypress and oak; further n. there are valuable pine forests; and about the middle of the state, extending quite across from Georgia to Mississippi, is the "cotton belt," where cotton is the leading product, though nearly all crops can thrive. In the upper portion of the state, above the Georgia and Tennessee borders, is the mineral section, where gold was found nearly half a century ago, and has been irregularly worked since. There is also a district underlaid with coal, covering nearly 4400 sq.m. Other minerals of importance are found, especially iron in great abundance; one bed called the Red Mountain, from the color of the ore, exhibits iron ore in a continuous line for nearly a hundred m. in a vein from about 2 ft. to 8 ft. thick. There are also valuable beds of brown hematite ore, which produces iron of the best description. Investigators report the finding of other metals, but none are of commercial importance except iron, gold, and its accompanying silver. Superior granite appears in Coosa co.; pottery and porcelain and fine clay are known, with lithographic stone, white marble, and other valuable building materials. In one locality fine variegated marbles are found.

The rivers and bays of A. are numerous, though but one of the latter is widely known to outside commerce—the bay of Mobile. Grand and Bon Secour and Perdido bays are small and unimportant. The Tennessee river dips into A. near the n.e. corner, passes through or separates eight counties, and goes out at the n.w. corner, for a few m. forming the boundary with Mississippi. The Tombigbee comes in from Mississippi near the middle of the w. boundary, and in a tortuous course takes up the Sipcey and the Black Warrior, and joins with the A. about 50 m. above Mobile bay, the two forming the Mobile river. The A. is formed by the Cahawba, the Coosa, and the Tallapoosa, and with its tributaries drains all the middle portion of the state. The Chattahoochee forms the boundary with southern Georgia and passes into Florida to the gulf; and other Florida streams, the Choctawhatchie, Yellow Water, and Escambia irrigate the s.e. portion of A. The Perdido forms the boundary with Florida.

For local government A. is divided into 65 counties. The state capital is at Montgomery; Mobile is the most important city, having a pop. of 32,034 in '70. Other places of note are Huntsville, Eufaula, Selma, Talladega, Tusculmbia, and Tusculloosa.

A. is still well stocked with wild game, especially in the northern parts, where there

are deer, rabbits, squirrels, opossums, raccoons, foxes, wild cats, and wolves; and of birds, partridges, pigeons, wild turkeys, rice birds, ducks, etc. Serpents are found; among them the dangerous moccasin. Fish of good quality are plentiful, and the alligator is occasionally seen near the coast bayous.

Besides more than 1500 m. of inland steamboat navigation along the Alabama, Tombigbee, Black Warrior, Chatthaochie, and Tensaw rivers, A. was provided with 1839 m. of railroads in 1878, as compared with 853 m. in 1868. These roads are the Alabama Central, from Selma to Lauderdale, Miss., 96 m.; the Alabama Great Southern, from Wauhatchie, Tenn., to Meridian, Miss., 290 m., of which 250 m. are in A.; the A. and Cincinnati, from Opelika to Buffalo Wallow, and from Gadsden to Attala, 27½ m.; the Memphis and Charleston, from M. to Stevenson, Ala., 292 m., of which 106½ are in the state; the Mobile and Alabama Grand Trunk, from Mobile to Bigbee, 59½ m.; the Mobile and Girard, from Columbus, Ga., to Troy, Ala., 84 m.; the Mobile and Montgomery, from M. to M., 179 m.; the Mobile and Ohio, from M. to Columbus, Ky., 492 m., of which 78 are in the state; the Montgomery and Eufaula, from M. to E., 80 m.; the Nashville, Chattanooga, and St. Louis has a branch from Decherd to Taylorville, 33 m. in the state; the Nashville and Decatur has 28½ m. in A.; the New Orleans and Mobile has 31½ m.; the New Orleans and Selma has 21 m.; the Savannah and Memphis, from Opelika to Goodwater, 60 m.; the Selma and Greensboro, from Marion Junction to Sawyerville, 45 m.; the Selma and Gulf, from S. to Pollard, 100 m., is opened for 40; the Selma, Rome, and Dalton, from S. to the Georgia state line, 171½ m.; the Southern and Northern Alabama, from Decatur to Montgomery, 183 m.; the Vicksburg and Brunswick, from Eufaula to Clayton, 21½ m.; the Western of Alabama, from Selma to Opelika, 116 m., with branches from Opelika to West Point, 22 m., and from O. to Columbus, 29 m. There are four or five roads less than 10 m. long.

The n. part of A. possesses a most delightful climate, and invalids seek its benefits by resort to such localities as Huntsville. With the exception of malarial fevers in a few swampy places along the rivers, the whole state may be considered healthful. The heat is occasionally severe, but is not of long continuance, and a cool breeze from the gulf prevails at night over a large part of the southern section. Rain is scarce in the early summer, but plentiful in early spring, February being the rainy month. Spring and well water are excellent in the northern but poor in the center and southern portions of the state. Lying between the semi-tropic and temperate degrees, the vegetable growth of A. combines features of the two. There are various oaks, pine, chestnut, hickory, elm, cedar, and mulberry in the north. Lower down, are cane brake and cedar in clumps like islands, the trees covered with mosses that hang like mourning weeds from their limbs. Still further s. are the cypress, live oak, and magnolia; and instead of the pears, plums, and apples of the northern states, there are oranges, pomegranates, olives, figs, apricots, and grapes. The northern portion is best adapted to cereals, the center and southern to cotton; and along and near the gulf coast sugar and rice are good crops.

On the 1st Jan., 1879, 94 periodicals were issued in A.; 6 daily, \$2 weekly, and 2 semi-monthly.

In education, in which of late years good progress has been made, the latest report shows a school population of 370,245, of whom 214,720 were white, and 155,525 colored; and there were 159,659 enrolled in schools—96,136 white, and 63,523 colored; average attendance, about 62 per ct. of all enrolled. There were 3303 schools for whites, and 1452 for colored. The school age is from 7 to 21. There were 4796 teachers; schools lasting 85 days in the year, and costing \$376,954; school fund, \$377,634, and school income, \$350,000. Common and high schools are increasing in number, and are increasingly prized by the people. There are normal schools at Florence, Marion, and Talladega; having in all over 500 students. The higher grades are represented by Spring Hill college (Roman Catholic), near Mobile; Howard college (Baptist), near Mobile; Southern university (M. E. ch. south), Greenboro; and the university of Alabama (non-sectarian), at Tuscaloosa. In 1878 these colleges had 50 instructors and 486 pupils. There is a theological department of Talladega college (Congregational); an institution under the care of the American missionary association, whose work is especially among the colored people; a state agricultural and mechanical college at Auburn; a college of medicine in the Southern university, and also in the college of Alabama; and there are law schools in both the colleges last named. Several of the colleges have departments of theological education. There are experimental farms attached to the agricultural college. There are several colleges for women, under Methodist, Baptist, Presbyterian, and Episcopal management. In libraries, which in 1870 numbered 1132 private and 298 public, there was an aggregate of 576,882 volumes.

In the civil war of 1861-5 Alabama was among the earliest of the states to secede, a special convention passing an ordinance for that purpose Jan. 11, 1861; the same convention called for the general convention, which was held at Montgomery, the state capital, less than four weeks later, Feb. 4, and organized the confederate government by selecting Jefferson Davis for president. The governor of A., Andrew B. Moore, had in January taken possession of fort Morgan, in Mobile bay, and seized a revenue cutter. There was considerable opposition to secession among the people of the northern section of the state, but they made no noteworthy demonstration. In the course of the contest A. felt the power of the national arms in the capture of Selma and some other towns,

but especially in the remarkable exploits of admiral Farragut in Mobile bay, the city itself being among the latest captures in the war of the rebellion. After the war a provisional governor was appointed; but the people made haste to retract the secession ordinance, and after a few months the military power was withdrawn. In Nov., 1867, a convention met to frame a new constitution, which was voted for and adopted in Feb., 1868; and in June of the same year the state was again allowed to be represented in congress. While in some of the states there was bitter opposition to the laws and methods of reconstruction, in A. there was more quietness, and no serious invasions of personal or political rights are reported.

Elections in A. are biennial; the legislature meets biennially, and is limited to a session of 50 days. The governor's term is two years, and his salary \$3000 per year. There are 33 state senators and 100 representatives, each county having at least one of the latter; and members of either house must be at least 25 years old. Senators serve four and representatives two years; their pay is \$4 per day, with mileage at 10 cts. per m. Voters must be citizens, six months residents in the state, and take oath to support the federal and state constitutions and laws; all voting is by ballot. The supreme court has appellate jurisdiction only, and must be held at the capital twice in each year: there are a chief justice and two associates, holding office six years, during which they can hold no other office of public trust or profit. Other courts of the usual order are provided. An exemption law secures from seizure for debt 160 acres with a house in the country; or, in cities, a lot and dwelling of \$2000 value; and personal property of \$1000. Interest is at 8 per ct., with complete forfeiture for usury, whether under contract or not. No provision in law is made for insolvent debtors. All property, real and personal, belonging to a woman before marriage is hers afterwards, and is not liable for the husband's debts. Wills must be in writing, signed by the testator, or by some one in his presence, and witnessed by three persons.

There are 65 counties in the state; the capital is at Montgomery, the capital of the late southern confederacy. The places having more than 10,000 inhabitants in 1870, were: Mobile, 32,034, and Montgomery, 10,588. The state has furnished of home-produced gold for the mint, \$217,233. The value per acre of all crops taken together in 1878 was \$8.25. The state debt the same year was \$9,452,669; there was raised by tax \$818,269; rate of tax, 70 cts. on \$100. The tonnage in 1878 was 72 sailing vessels, 10,245 tons; and 39 steamers, 6083 tons; total, 111 vessels and 16,328 tons.

The vote of A. for president and vice-president has been: in 1820, 3 votes for Monroe and D. D. Tompkins; 1824, 5 votes for Jackson and Van Buren; 1836, for Van Buren and R. M. Johnson; 1840, for Van Buren and Johnson; 1844, 9 votes for Polk and Dallas; 1848, for Cass and W. O. Butler; 1852, for Pierce and W. R. King; 1856, for Buchanan and Breckenridge; 1860, for Breckenridge and Jos. Lane; in 1864 A. had no vote; in 1868, 8 votes for Grant and Colfax; 1872, 10 votes for Grant and Wilson; 1876, for Tilden and Hendricks.

ALABAMA, THE, an armed vessel of the Confederate states of America, which inflicted terrible injury upon the shipping of the northern states of the American Union during the civil war which broke out in 1861. The career of the A. was in more than one respect unparalleled in the history of any previous naval war. She was, for a war-ship, a small vessel, built for speed, carrying a few guns, and intended not for fighting, but for preying upon defenseless merchant-ships. She was almost the only vessel the Confederate states had upon the open seas; but the destruction she wrought was so great, and in effect so alarming, as to produce a very marked diminution in the number of commercial vessels carrying the flag of the United States. She was built, too, in a British port, and never at any time, entered a port of the state by which she was commissioned: there was no port available for the disposal of her prizes, and, ship and cargo, they were usually burned. Her career demonstrated how completely, in the present state of commerce, under the conditions of navigation and naval warfare produced by steam and long-range artillery, belligerents fairly matched might ruin each other at sea; and it raised international questions between the United States and Great Britain, which more than once threatened to issue in the gravest consequences to both nations. Even the end of the A. was singular and instructive: perhaps it was too honorable an end for such a career as hers. She went down in an artillery duel, quixotically entered upon for a fancied point of honor, with a vessel protected by armor: illustrating the impotence, in modern naval warfare, of the gallantry of the most gallant of seamen against advantages derived from speed, armament, and armor.

At the beginning of the civil war in 1861, the Confederate states were without a navy, and apparently without the means of acquiring one. Their population was agricultural; they had neither ships nor seamen; and the northern states promptly instituted an effective blockade of nearly all their ports. The able men who had planned the secession of the southern states from the American Union had not overlooked the subject of a navy; but events had been against them. They had reckoned upon securing a part of the United States fleet; and before the war commenced, they had determined upon fitting out small and swift vessels, carrying a few heavy guns, to cruise against the northern commerce. They had no lack of able naval officers; for a majority of the senior naval officers of the United States were southern men, and were at their command.

Early in 1861, while parleying was still going on between the North and the South, and hopes of a peaceable separation were not extinct, capt. Raphael Semmes had been empowered by the southern leaders to purchase ships and stores for the South; but as regards ships, capt. Semmes appears to have been unsuccessful. It was not till several months after the war began, in June, 1861, that the Confederate states were able to send their first armed cruiser to sea. This was the *Sumter*, a small steamer, which had previously traded between New Orleans and Havana. Capt. Semmes, who was appointed her commander, was singularly qualified for the work expected of him. He was a native of Maryland, about 51 years of age; he had been a commander in the U. S. navy, and now held the same rank in the service of the southern states. Besides possessing high professional abilities and attainments, he was a man of acute intellect and of decided character; and he was thoroughly instructed in the principles and details of international law and etiquette. He seems to have united with the good qualities of a naval officer the qualifications of an able lawyer, diplomatist, and publicist. He could be trusted to secure for a war-vessel of the Confederacy, however small, every advantage to which she was entitled from neutral powers; to give to subjects of neutral powers, and of the other belligerent alike, nothing which was not strictly their due; to carry out without flinching, unmoved by taunts and abuse, the work of destruction which was expected at his hands. His career in the *Sumter* is a record of triumphs won over neutral governors and ministers, who were disinclined to admit the little *Sumter* to the position of a belligerent war-vessel; of clever avoidance of the enemy's cruisers, of which several were always on his track; and of the destruction of valuable ships and cargoes belonging to citizens of the United States. The *Sumter* and her captain were soon known throughout the world. The enemy called capt. Semmes a pirate, and could they have caught him, would probably have treated him as a pirate. But he appears to have done nothing but what it was his right as a belligerent to do; at any rate, he was scrupulous not to exceed the precedents of international law. It was upon his system of burning his captures, not upon the captures themselves, that the people of the northern states founded their charge of piracy; but no Confederate port was open to him for the disposal of his prizes; and his treatment of them, though it greatly shocked an age which had seen scarcely anything of naval warfare, was warranted by precedents, and was probably, though not unquestionably, within his right. As an occasional resource, to be adopted upon an emergency, the burning of captures made at sea is undoubtedly lawful; it is not so certain that a belligerent is at liberty to carry out a *system* of burning captures, made without the hope of being able to bring them into port for adjudication before a prize court. The cruise of the *Sumter*, which began on the 30th June, 1861, with her escape from New Orleans, then strictly blockaded, was over before the end of the year: but she had captured 18 vessels, had spread alarm through the northern sea-ports, and had put ship-owners and merchants to heavy charges for insurance; and by disinclining merchants to ship their goods in northern vessels, had seriously injured the shipping trade of the northern states. Eventually, she was laid up at Gibraltar, and declared unfit for further service: had she been seaworthy, it would have been very difficult to carry her out of a port where she was diligently watched by northern cruisers. She had, however, verified the anticipations of the Confederate government; and in 1862, this government found a successor for her, much better fitted for the work to be done, and destined to far greater celebrity. This was the *Alabama*.

This vessel was built for the Confederate government by Messrs. Laird & Sons at Birkenhead. She was a screw steam-sloop of 1040 tons register, built of wood, and for speed rather than strength. She was bark-rigged, and was fitted with two engines of 350 horse-power each; she was pierced for 12 guns, and had the means of carrying two heavy pivot-guns amid-ships. She cost £47,500 without her equipment: including her equipment, £51,716. Semmes, now a captain in the Confederate service, was, in June, 1862, appointed to superintend her equipment, and take command of her when ready for sea. Both capt. Semmes and commander Bullock, who had superintended the building, were enjoined by the Confederate government to keep the destination of the vessel as secret as possible, and carefully to avoid any infringement of public law or of the municipal law of Great Britain, which would give the British government a pretext for seizing her. These instructions were carefully acted upon. The destination of "No. 290," as she was called from her number in the list of steam-ships constructed by the Messrs. Laird, was so well concealed, that she was nearly finished before it was suspected by the emissaries of the United States. According to previous practice, there was no great difficulty in avoiding the infringement of the public and of the municipal law in such a case. It had been held lawful to build vessels for a belligerent in neutral ports, and lawful to purchase guns and stores in neutral ports, though they might be for the equipment of vessels thus built. What had been held unlawful was the equipment with guns and war-like stores of a vessel built for a belligerent in a neutral port previous to her leaving the neutral jurisdiction. Capt. Semmes did not intend to equip his vessel at Birkenhead, and therefore, supposing the rules of public law to have remained unchanged, he intended no infringement of the law. But the U. S. minister called upon the British government to detain the "No. 290," submitting some evidence that she was intended for a Confederate war-vessel. He maintained, or, at any rate, it has since been maintained on the part of the United States, that her construction, being that of a war-vessel, was so different

from that of vessels built for trade, as itself in some measure to constitute an equipment for war. The British government consulted the crown lawyers, who at first thought the evidence of destination insufficient. Afterwards, when further evidence was presented, a delay was caused by the illness of Sir John Harding, the queen's advocate. When an opinion favorable to the detention of the vessel was at length given, "No. 290" was gone. The builders, made aware of the danger of a seizure, had made haste with their work; the vessel, though unfinished, was got ready for sea; under pretense of a trial trip, she made her way down the Mersey to Moelfra bay, where the work remaining to be done was actively carried on; and on the morning of the 31st July, 1862, warning having been given that she was to be seized that day, the "No. 290" steamed away from the British coast. The ablest English lawyers were of opinion that there had been no infringement of the law, but that a case had been presented which the British government was bound to submit to a court of law. The detention of the vessel during a protracted lawsuit would have served the purposes of the United States almost as well as her condemnation; and as she must have been detained but for the delay caused by Sir J. Harding's illness, it is not without a show at least of reason that the U. S. government claimed from Great Britain indemnification for the losses consequent upon her escape.

"No. 290" made for Terceira, one of the Western islands, where she arrived on the 13th of Aug.—her speed and sea-going qualities being fully proved upon the voyage; and a few days after she was joined by the *Agrippina* of London, carrying her guns, stores, and supply of coal, and by the *Bahama*, with capt. Semmes and his officers on board. By the 24th of Aug. she had shipped her armament and stores and was ready for sea; and now capt. Semmes produced his commission to the sailors, named the vessel the A., and hoisted the Confederate flag. The sailors on board the A. and her consorts were Englishmen, all entered for a feigned voyage; but with few exceptions they enlisted under capt. Semmes, though the terms upon which they insisted were exorbitant. The crew now consisted of 80 men all told, and the armament of eight 32-pounders. By the end of Aug. the vessel was got into good order, and she made her first capture on the 5th of Sept. Within 11 days of that date she captured and burned property the value of which exceeded her own cost. The people of the United States were filled with indignation against Great Britain for permitting the escape of such a destroyer. Their indignation against "the pirate Semmes" was only less than the alarm with which they regarded the depredations of the A. Several fast-sailing cruisers were sent in search of her.

Capt. Semmes made for the American coast, which he had determined to make his first cruising ground. He was ambitious of making a few captures within sight of New York; but running short of coal, he was obliged to give up this somewhat daring scheme, and make for a coaling-station. He afterwards lay on the track of the California mail-steamers running between Aspinwall and New York; and after waiting for some time he captured the *Ariel* mail-steamer, with 140 marines, several U. S. officers, and 500 other passengers on board. A heavy gun and a quantity of specie were all that he took by this capture, but it greatly raised the prestige of the A., and increased the alarm of American ship-owners. The passengers and crew of the *Ariel* were too numerous to be taken on board the A.; and as capt. Semmes found yellow fever raging at Kingston in Jamaica, at which port he intended to have landed them, he was unable to destroy the vessel, and had to set her free, after taking a bond for a large sum to be paid on the conclusion of the war. Shortly after, on the 11th Jan., 1863, an encounter occurred between the A. and a U. S. vessel, which still further augmented the reputation of the former. Cruising off Galveston in Texas, the A. gave battle to the U. S. gunboat *Hatteras*, an old vessel, somewhat her inferior in armament, and sunk her after a few broadsides. The destruction of the *Hatteras* and the capture of the *Ariel* were the most remarkable events in the career of the A. until her closing scene arrived. Her history consists of a monotonous succession of captures made in different seas, her prizes being merchant-vessels incapable of resistance, which were burned, or, when there was convincing evidence of the neutral ownership of the cargo, which did not often happen, liberated upon bond. She captured in all 65 vessels; and the value of the property she destroyed has been estimated at \$4,000,000. It was, however, by the heavy insurance for war-risks to which she subjected them, and still more by the difficulty she caused them in getting freights that the A. career inflicted the greatest injury upon the ship-owners of the United States. When the pursuit after her became too hot on the American coast, she sailed for the cape of Good Hope and cruised in the eastern seas. Returning to Europe, she arrived in the English channel in June, 1864, and on the 11th of June entered the French port of Cherbourg to refit and supply herself with stores. She had been nearly two years at sea, and had got into bad condition; her speed and sailing qualities were considerably impaired. Permission to make the necessary repairs was given by the authorities of the port of Cherbourg.

But within a few days the U. S. steamer *Kearsarge*, commanded by capt. Winslow, a former shipmate of capt. Semmes, arrived at Cherbourg; and she made a demonstration which the officers and crew of the A.—writhing under the abuse that had been heaped upon them, and aware that their career had been inglorious—regarded and resented as a challenge. Capt. Semmes knew and probably shared their feelings, and determined to gratify them. He sent notice to the U. S. consul that he would sail out and fight the *Kearsarge*. The two ships were to appearance not unequally matched, in reality the

Kearsarge had considerably the advantage in number of crew, armament, speed, and general condition; besides, that she was protected amid-ships by armor. The fact of her being thus protected, and the extent of her superiority, seem to have been unknown to capt. Semmes. The fight took place on Sunday, the 19th of June, outside the port of Cherbourg, all Cherbourg gazing at it from the neighboring heights. The *Kearsarge* having the superiority in sailing, was able to keep at a distance of about 500 yds. from her enemy; her armor in a great measure protected her from the enemy's shot; and, as might be expected her guns were better served than those of the A. Before the fight had lasted an hour, capt. Semmes found his ship was sinking, and gave orders to pull down his flag. The boats were got out and the wounded placed in them; but before the *Kearsarge* could come to the rescue the A. went to the bottom. The boats of the *Kearsarge* saved many of the crew. Others, including capt. Semmes, were picked up by an English yacht, the *Deerhound*, which had been allowed by capt. Winslow to help in rescuing the A.'s crew. These the *Deerhound* immediately carried within the neutral jurisdiction. Semmes and the others saved by this vessel were afterwards charged with having broken their faith as prisoners who had asked for quarter from the *Kearsarge*. As regards the *Deerhound*, the seamen of the A., once upon its deck, were entitled to the protection of Great Britain, and no previous compact could have deprived them of it.— See *The Cruise of the Alabama and the Sumter*, compiled from the papers of capt. Semmes.

The "Alabama question" was fairly raised in the winter of 1862-63, when Mr. Seward, in his diplomatic correspondence, declared that the Union held itself entitled at a suitable time to demand full compensation for the damages inflicted on American property by the Anglo-rebel vessels; and the question never ceased to be a source of irritation between the two peoples till its final settlement by special tribunal of arbitration. This court, consisting of the representatives of England and the United States, and of three other members appointed by the king of Italy, the president of the Swiss confederation, and the emperor of Brazil, met at Geneva, 17th Dec., 1871, and, the claim for indirect damages to American commerce having been allowed to drop, gave its final award, 15th Sep., 1872. It was decreed that Great Britain should pay a sum of £3,229,166 13s. 4d.

ALABASTER, WILLIAM, D.D., 1567-1640, an English poet and scholar. He was educated at Cambridge and Oxford, and was a fellow of Trinity college. He was appointed chaplain to Robert, earl of Essex, whom he accompanied in 1591 in the expedition intended to assist Henry IV. against the league. In France he was converted to the Roman Catholic church, but did not long remain in it. His report was that he was enticed to Rome and imprisoned, but escaped. Returning to England he became prebendary of St. Paul's and rector of Hatfield. A. was a famous Hebrew scholar, with a strong inclination to mysticism in tracing the meaning of scripture. Dr. A. published several works on scriptural subjects, and left a number of poems in MSS., one of which was surreptitiously published—a tragedy called *Roxana*, which Dr. Johnson regarded as the only Latin verse of English production worth naming until Milton appeared.

ALACHUA, a co. in n. Florida, between the Santa Fe and Suwannee rivers, crossed by the Florida railroad; 1000 sq.m.; pop.'70, 17,328—12,393 colored. It has a rolling surface and fertile soil, producing sea-island cotton, sugar, etc. Co. seat, Gainesville.

ALACOQUE, MARGUERITE MARIE, 1647-90; a French nun, who established the festival of the sacred heart of Jesus. She took the veil at Paray-le-Monial, where she is said to have performed miracles, prophesied, made revelations, and held direct communication with God and the angels. She foretold the day of her death, and cut the name of "Jesus Christ" on her bosom with a knife. By the Roman Catholic church she is called "venerable." Her treatise on devotion to the heart of Jesus she claimed to have been a supernatural communication.

ALADAGHI, a mountain chain in Asiatic Turkey in which the Euphrates rises. The chief portion of the chain is above the basin of the lake Van, between 39° and 40° n. and 42° and 44° e., forming part of the water-shed between the Caspian sea and the Persian gulf.

ALAIN DE LILLE, 1114-1203; a Cistercian scholar, called "the universal doctor," one of the most learned men of the 12th c., in philosophy, theology, history, medicine, and poetry. He was appointed bishop, but soon resigned to enter a monastery. He wrote chiefly in verse on alchemy, natural philosophy, and doctrinal subjects. Germany, Scotland, Spain, Sicily, and Flanders contend for his birthplace; but he said he came from Lille in Flanders, as his name implies.

ALAIS, a t. of the dep. of Gard, France, situated in a fertile plain, on the right bank of the Gardon, at the base of the Cevennes mountains, 23 m. n.w. from Nîmes, with which it is connected by railway. It embraced the Protestant cause in the religious wars of France; and Louis XIII. in person, accompanied by the cardinal de Richelieu, besieged it, and having taken it in 1629, demolished its walls. Three years later, the baron of A. having taken part in the rebellion of Montmorency, the castle was destroyed. Protestantism still prevails to a considerable extent. A. is a very flourishing t., and owes its prosperity chiefly to the mineral wealth of the surrounding district, which pro-

duces coal, iron, lead, zinc, and manganese. The coal and iron mines are of chief importance. There are large iron-foundries in the town and neighborhood. There are also manufactures of ribbons, stockings, gloves, vitriol, and earthenware. A. is an episcopal seat. Pop. '75, 15,384.

ALAJUELA, a city of the state of Costa Rica, Central America, 23 m. w.n.w. from Cartago, and a little on the western side of the water-shed between the Atlantic and the Pacific. It contains many good houses, and has extensive suburbs of detached houses, embowered among trees and flowering shrubs. The neighborhood is chiefly devoted to the culture of the sugar-cane. Pop., including suburbs, 12,575.

ALAKO', the messiah of the gypsies, the son of their chief god, Baro-Devel. The gypsies hold that A. will ultimately restore them to their native place in Assyria. He is represented with a sword in his right hand, and a pen in his left.

ALAMANCE, a co. in North Carolina, on the Haw river and the North Carolina railroad; 500 sq.m.; pop. '70, 11,874—3640 colored. It has an undulating surface and fertile soil, producing tobacco, corn, etc. Co. seat, Graham.

ALAMEDA, a co. in w. California, on the bay of San Francisco, and traversed by several railroads; 820 sq.m.; pop. '80, 63,639—1939 Chinese. The land is fertile, and the scenery especially attractive. There are medicinal warm springs, impregnated with iron, lime, sulphur, and magnesia. Co. seat, San Leandro.

ALAMO, THE, a fort founded in the Texan war of independence near San Antonio, Bexar co., Texas. It was oblong, covering about an acre, with walls 8 or 10 ft. high, and a yard in thickness. Here, Feb. 23, 1835, Santa Anna with 4000 Mexicans shut in 140 Texans and men from the United States commanded by col. Wm. B. Travis. Bombardment was kept up 24 hours, and several assaults were repulsed; Travis sent for help, but only 32 men reached him, and all his men suffered greatly from fatigue and want of provisions. On the 6th of Mar. at daylight the Mexicans assailed in force, and were twice driven back with heavy loss. A hand to hand fight ensued, in which, lacking time to load, the Texans clubbed their rifles and fought desperately until only six were alive. These, of whom col. Crockett was one, surrendered under promise of protection, but Santa Anna had them instantly cut to pieces; col. Bowie, ill in bed, was shot after killing a number of his assailants, and maj. Evans was shot while trying to fire the magazine. Only three—a woman, a child, and a servant—were spared. Then the bodies were collected, mutilated, and burned. A few weeks later Santa Anna was routed with immense loss and himself captured in the battle of San Jacinto, where the cry "Remember the Alamo" excited the Texans to fight like heroes.

ALAMO3, Los (i.e., *The Poplars*), a t. of Mexico, in the state of Sonora, and department of Sinaloa, 110 m. n.n.w. from Sinaloa. It is situated in a barren plain, but in a region famous for its silver mines. The houses are mostly of stone or brick, covered with stucco. Provisions are dear, being brought from a distance, and the t. is very insufficiently supplied with water. Pop. 10,000.

ALAN, **ALLEN**, or **ALLYN**, **WILLIAM**, 1532-94; an English cardinal. He studied in Oxford, and became principal of St. Mary's hall in 1556. Two years later he was made canon of York. He opposed the reformation, and on the accession of Elizabeth fled to Louvain. After a while he returned to England, but his proselyting zeal made another flight necessary. He was given a doctor's degree by the new university of Douay, and established there a college for English Roman Catholics, whence he sent Jesuit priests to his native land, the aim of his life being to restore papal supremacy in England. In 1580 he was made archbishop of Mechlin. He was a bitter enemy of Elizabeth, who expelled some of his emissaries and put some to death. In one of his pamphlets he made charges against the queen too foul for decent pages. He was in the armada plot—the pope having promised him the see of Canterbury in case of success. He fell into disfavor with the failure of the armada, and was even refused permission to return to his diocese.

ALA'NI, nomadic tribes of eastern origin who spread over Europe during the decline of the Roman empire. They probably were first encountered by the Romans when Pompey, in the Mithridatic war, led an expedition into the Caucasus. In 276 A.D. they were checked by the emperor Tacitus in their attempt to go eastward into Persia. The Huns gave them a severe defeat on the Tanais in 375, and then the A. divided, some going e., but the larger portion joining their conquerors in an invasion upon the Goths. With the Vandals and Suevi they entered Gaul in 406, and later crossed the Pyrenees and founded settlements in Lusitania, where they lived for some time in peace. In 418 they were attacked by the Visigoths, their king was slain, and they became subject to Gunderic, king of the Vandals, losing completely their national independence. About 450 they served under Theodoric; but they sympathized with the barbarians, and their desertion at Chalons (451) came near bringing defeat upon the Roman army. They were mentioned occasionally in later times, and seem to have kept their independence after the 6th c. In 1221, Gengis Khan defeated them, and they were so completely subjugated in 1237 by Batu-Khan that their name disappeared from history.

AL-ARAF, in the Mohammedan religion, the line or wall of separation between heaven and hell, astride of which are placed those whose accounts of good and evil exactly balance, so that they deserve neither hell nor heaven; also those who went to war without consent of their parents, who are deemed martyrs, safe from hell but not quite worthy of heaven.

ALARCON, HERNANDO DE, a Spanish navigator of the 16th c., the first to visit the coast of California. He sailed May 9, 1540, to meet a land expedition under Vasques de Coronada, but did not find him. He discovered that lower California (a supposed island) was a peninsula, made a good survey of the coast, sailed up the Rio de Tizon (Colorado), and on returning to Mexico, in 1541, made a map of California, which differs little from those of the present day.

ALARM, BURGLAR, an application of wires and a battery, whereby every door, window, scuttle, or other means of entrance to a building is so connected by electricity, that an attempt to open any one sets a bell ringing in one or more sleeping rooms or in the watchman's quarters. The battery is in a box 20 in. by 9×6, and all the wires are entirely concealed. A switch shuts off the battery in the day-time, or when not needed; and the alarm may be set for the whole or any part of a house. Alarm is given if a door or window be accidentally left open, and the bell rings continuously unless purposely stopped. The B. A. is largely used in private houses in New York and other cities.

ALASCO, JOHN, 1499-1560; a Polish nobleman and traveler, who imbibed the doctrines of Zwingli, and had intercourse with Erasmus, who esteemed him highly, bequeathing to him his library. He first preached Protestantism in east Friesland, but, anticipating persecution, he went to London, on Cranmer's invitation, and became superintendent of the congregation of the foreign Protestant exiles. On the accession of Mary, in 1553, he and all his congregation were banished. In 1556, he returned to Poland, where he died. He wrote many treatises, and was one of the 18 divines who prepared the Polish version of the Bible.

ALA-SHEHR' (i.e., *the exalted city*, ancient *Philadelphia*), a city of Asia Minor, in the pashalik of Anatolia, 75 m. e. by s. from Smyrna, at the n.e. base of Mt. Tmolus. It was founded by Attalus Philadelphus, king of Pergamos, about 200 B.C., and is famous as the seat of one of the "seven churches of Asia." It is still a place of considerable importance, and carries on a thriving trade by caravans, chiefly with Smyrna. It is surrounded by a wall, and is of large extent; but the streets are narrow and dirty. There are many interesting remains of antiquity. Pop. about 8000, including 250 Greek families.

ALASKA (*ante*), comprises all the N. American continent w. of the 141st degree of w. long., together with a narrow strip between the Pacific ocean and the British dominions; also all the islands near the coast, and the Aleutian archipelago, except Copper and Behring islands on the coast of Kamtchatka. The area, including islands, is 580,170 sq. m.; and in 1870 the population amounted to 29,097, of whom 26,843 were natives of the territory, 1421 were half-breeds, 483 Russians, and 350 from the United States and foreign countries. The capital is Sitka, formerly called New Archangel, and is the only t. of importance in the territory. It is on a commodious harbor on Baranov island, 53° 3' n. lat., and 135° 17' w. long. The t. was long the headquarters of the Russian-American fur company. When the cession to the United States was made in 1867, Sitka was a collection of log huts about 100 in number, with but few respectable buildings, and these were occupied by government officers. St. Paul, in Kodiak island, is the principal depot of the seal fisheries, and around it is the best agricultural land in the territory. There is another considerable settlement on Oonalaska island, where there is good anchorage. Trading ports are scattered over the sea-coast of the territory, the chief of them being Fort Yukon, near 66°, the most northerly station of the Hudson bay company. Little is known of the interior of the territory except along some of the large rivers. The coast line measures over 4000 m. along the Arctic ocean on the n., Behring's sea on the w., and the Pacific ocean on the s. The climate is much less severe than in corresponding latitudes on the e. coast of the continent, as it is moderated by the warm water of the Pacific, whose effect upon the w. coast of North America is like that of the gulf stream upon the w. coast of Europe. In the Yukon, or most northerly districts, it is very cold; the earth remains frozen all summer, and ice in the river Yukon is from 5 to 9 ft. thick in winter. The islands and the southern or Sitka district are not so cold. The lowest record of temperature is 70° Fahr. below zero. The summer is short, dry, and hot. May to Aug. is the pleasant season, and rain falls almost continuously in Aug. and Sept. The average annual rain-fall is about 40 in., and there are about 150 rainy days in a year. Jan. and Feb. are usually pleasant months. Sitka is in a wet situation, and it is said that more rain falls there than in any place not within the tropics. From 60 to 90 in. per year have been recorded, and the days of rain from 190 to 285. There is little of agriculture in the territory, though on the islands oats, barley, and root crops can be raised without great difficulty. The fisheries and the fur trade are the leading and almost only industries. In 1870, the product of salted codfish alone was 10,612,000 lbs. Seal-catching is still more important. The annual catch of fur seals throughout the world has been estimated at 160,000 animals, of

which 100,000 are taken in Alaskan waters; the value for Alaska being estimated at \$1,200,000 per annum. The home of the seal, in the breeding and summer season, is on the islands of St. Paul and St. George, 300 m. from any other land. At the beginning of winter they migrate, and none are seen until the following spring. Laws have been enacted by congress to regulate the seal fisheries, in order to prevent the utter extinction of the animal. The fishery is now controlled by the Alaska company of California, who are not allowed to take more than 100,000 pelts per year; and they are to avoid killing females and very young male seals; while very old males are not worth killing. The company's right does not cover other fur-bearing animals. They employ about a dozen vessels and have 20 or more posts on the island and mainland. The United States government has a considerable income from the rent of the island and the tax on sealskins. No regular government had been established up to the autumn of 1879, but the people had chosen officers and formed a provisional government of their own.

The name of A. is an English corruption of Al-ak-shak, "the great land." The traveler by sea comes first to the great archipelago, the islands of which make a land-surface of 31,000 sq.m. Stretching along the Aleutian islands for 1500 m. are 61 volcanoes, ten of which are active; the grand Shishaldin, nearly 9000 ft. above the waves that wash its base, and Akuten, Makushin, and others, are belching out fire and smoke. The highest mountain is Mt. St. Elias, in the coast range, supposed to be nearly 18,000 ft. high, and by that estimate the loftiest point in North America. A. is one of the greatest glacier regions on the globe. From Bute inlet to Unimak pass every deep gulch has its glaciers, some of which are grander than any in the Alps. In one of the gulches of Mt. Fairweather is a glacier that extends to the sea, a distance of 50 m., and then breaks in a perpendicular wall of ice 300 ft. high and 8 m. broad. About 35 m. above Wrangel on the Stickine river, between two mountains 3000 ft. high, is a glacier 40 m. long and 4 or 5 wide, and from 500 to 1000 ft. deep. Opposite this mass of ice, just across the river, are large boiling springs. The Indians regard this glacier as the personification of a mighty ice-god who has issued from his mountain home invested with power before which all nature bows in submission. They describe him as crashing his way through the cañon where its glistening pinnacles bordered upon the domains of the river-god, and that after a conflict the ice-god conquered, and spanned the river's breadth so completely that the river-god was forced to crawl underneath. The Indians then sent their medicine man to see how this could be avoided. The answer came that if a noble chief and fair maiden would offer themselves a sacrifice by taking passage under the long, dark, winding ice arch, his anger would be appeased, and the river be allowed to go on its way undisturbed. When the two were found and adorned, their arms bound and seated in the canoe, the fatal journey was made, and the ice has never again attempted to cross the river. At one of these glaciers ships from California have anchored and taken on a cargo of ice. It is also a great hot and mineral spring region; medicinal springs abound in sufficient number and variety to treat the diseases of the whole race. Goreloi, one of these, is a vast smoking caldron, eighteen miles in circumference.

All the early navigators and explorers, from Cook to the present time, have spoken of the immense numbers of salmon, cod, halibut, mullet, ulicon, etc. There are no other such fisheries in the known world. A missionary (the Rev. Sheldon Jackson, from whose report some portions are here extracted) thus describes a fishing scene on the Nasse river: "I went up to their fishing grounds on the Nasse river, where some 5000 Indians had assembled. It is what is called their 'small fishing.' The salmon catch is at another time. These small fish are valuable for food, and also for oil. They come up for six weeks only, and with great regularity. The Nasse, where I visited it, was about a mile and a half wide, and the fish had come up in great quantities, so great that, with three nails upon a stick, an Indian would rake in a canoe full in a short time. Five thousand Indians were gathered together from British Columbia and Alaska, decked out in their strange fantastic costumes; faces painted red and black, and they had feathers on their heads and imitations of wild beasts on their dresses. Over the fish was an immense cloud of sea-gulls, so many and so thick, as they hovered about looking for fish, the sight resembled a heavy fall of snow. Over the gulls were eagles soaring about and watching their chance. After the small fish, had come up larger fish from the ocean. There was the halibut, the cod, the porpoise, and the fin-back whale; man life, fish life, and bird life—all under intense excitement. And all that animated life was to the heathen people a life of spirits. They paid court and worshiped the fish they were to assist in destroying; greeting them, 'You fish! you fish! You are all chiefs, you are.' The Christian Indians had their separate camps, where they had worship morning and evening, and kept the Sabbath."

The principal fur-bearing animals of A. are the fox, marten, mink, beaver, otter, lynx, black bear, and wolverine. There are also the coarser furs of the reindeer, mountain sheep, goat, wolf, muskrat, and ermine. The extent of the range and quality of the furs in that extensive northern region is conducive to a very valuable fur trade, in addition to which are the seal-fur fisheries, that since 1871 have yielded to the government an income of \$1,891,030. Besides the fisheries and furs are the valuable deposits of coal, copper, sulphur, petroleum, and amber, with gold and silver. The gold and silver, so far, have been found only in limited quantities. It is the great lumber region of the country. The forests of yellow cedar, white pine, hemlock, and balsam fir will supply

the world when the valuable timber of Puget sound is exhausted. It has the great mountain peak of the country—St. Elias, 19,500 ft. high; and the Yukon, one of the largest rivers of the world.

A. is naturally divided into three great divisions: the Yukon division, comprised between the A. mountains and the Arctic ocean; the Aleutian district, comprising the A. peninsula and the Aleutian islands; and the Sitkan district, including all the mainland and adjacent islands s. of the peninsula. Each of these three great divisions has two climates, the coast climate and the interior climate; the latter being much severer than the former. The great gulf stream of the Pacific, known to geographers as the Japan current, strikes and divides on the western end of the Aleutian islands. A portion flows n. into Behring's sea, so that it is a remarkable fact that ice does not flow from the Arctic ocean southward through Behring's straits. The other portion sweeps southward and eastward, and makes the whole n.w. coast habitable, giving to southern A., on the coast and the adjacent islands, a winter climate milder than that of New York city. The Yukon district, bordering on the Arctic ocean, is remarkable for one thing. From 3 to 4 ft. below the surface there is a subsoil of frozen earth from 6 to 8 ft. deep. This phenomenon is ascribed to the want of drainage, together with a covering of moss that shields the ground from the hot suns of the Arctic summer; yet, notwithstanding this ice subsoil, during the summer months there is a luxuriant growth of vegetation. The great distinguishing feature of this district is the wonderful Yukon river, 2000 m. long, navigable for steamers for 1500 m. In some places on the lower Yukon one bank is invisible from the other. A thousand m. above its mouth it is, in places, 20 m. wide, including the intervening islands. It is one of the great rivers of the world, and upon its upper waters, within the arctic circle, is Fort Yukon, a post of the Hudson bay company. At this distant post, which tidings from the outside world reach only once a year, is a Scotch missionary. On its banks live thousands who know neither its outlet or its source, and yet, recognizing its greatness, proudly call themselves the "men of Yukon." Cape Prince of Wales and the island of Alton are the extreme western points of land in the United States—in long. $167^{\circ} 59' 12''$.

Fort Wrangel, a village of 100 houses, is on the north-western coast of Wrangel island, at the mouth of the Stickine river. Owing to the extensive gold mines at Cassair, on the Stickine river, it has become the chief business center of A. The Cassair mines employ about 2000 men, who create considerable trade. For this trade Wrangel is at the end of ocean and commencement of river navigation. Five ocean vessels run between Portland and Wrangel, and Victoria and Wrangel, and four small river steamers run on the Stickine river between Wrangel and the mines. The coast of Wrangel and the mouth of Stickine river were first visited by the American ship *Atahualpa*, of Boston, in 1802, three years before Lewis and Clark descended the Columbia. The permanent pop. is about 100 whites and Russians and 500 Indians. Besides these there is a large winter pop. of miners, and a floating Indian pop. of from 500 to 700 more, sometimes being from 2000 to 3000 Indians in the place. It is on the great highway of the Indians to and from the mines, also to their hunting and fishing. This makes it a central point for the establishment of a mission to the Indians, as parties from several large tribes are almost always in the village. The mission has a beautiful situation, overlooking the bay, the islands, and the Indian portion of the village, with its dwellings, its graves, and its emblems of heathenism. On the southern sweep of the shore of the bay stands the Indian portion of the village.

The native races in A. number about 25,000; Russians, 300 or 400; Americans and others, 500. The Indians can be divided into three great classes: the Inuit of Yukon district; the Aleutian and the Tuski of the Sitka district. And these again are divided into tribes, settlements, and families. These are largely in a condition of degraded superstition, and liable to all the horrible cruelties of heathenism. The old, sick, and useless are put to death, with various cruelties and disgusting rites. The Indians are again subdivided into various families, each of which has its family badge. The badges are the whale, the porpoise, the eagle, the coon, the wolf, and the frog. These crests extend through different tribes, and their members have a closer relation to one another than the tribal connection. For instance, members of the same tribe may marry, but not members of the same badge. Thus, a wolf may not marry into the wolf family, but may into that of the whale. Upon all public occasions they are seated according to their rank. This rank is distinguished by the height of a pole erected in front of their houses. The greater the chief, the higher his pole. Some of these poles are over 100 ft. high. The missionary relates how, upon one occasion, a head chief of the Nasse river Indians put up a pole higher than his rank would allow. The friends of the chief whose head he would thus step over made fight with guns, and the over-ambitious chief was shot in the arm, which led him to quickly shorten his stick. Their houses are from 25 to 40 ft. square, without a window, the only openings being a small door for entrance, and a hole in the roof for the escape of smoke. The door is 3 or 4 ft. above the ground level, and opens on the inside upon a broad platform, which extends around the four sides. This platform contains their rolls of blankets, bedding, and other stores. Some of the houses have a second platform inside the first, and a few steps lower. Then a few more steps down brings to the inside square on the ground floor, which is also planked, with the exception of about four ft. square in the center, where the fire is built on the ground.

Some few have a small inside room, looking as if it were a portion of the cabin of a wrecked vessel. The walls, and frequently roofs, are made of cypress plank, from 2 to 5 ft. wide, and 2 to 3 in. thick. These planks are made by first splitting the trees into great planks, then smoothing down the planks with a small adze. In front of their leading houses and at their burial places are sometimes immense timbers covered with carvings. These are the genealogical records of the family. The child usually takes the totem of the mother. For instance, at the bottom of the post may be the carving of a whale, over that a fox, a porpoise, and an eagle—signifying that the great-grandfather of the present occupant of the house, on his mother's side, belonged to the whale family, the grandfather to the fox family, the father to the porpoise, and he himself to the eagle family. These standards are from 2 to 5 ft. in diameter, and often over 60 ft. in height, and sometimes cost from \$1000 to \$2000. Formerly the entrance to the house was a hole through this standard, but latterly they are commencing to have regular doors hung on hinges. Among the Stickines these badge-trees or totems are usually at one side of the door.

A. is celebrated for its canoes. Some of the largest of these canoes are from 60 to 75 ft. long and 8 to 10 ft. wide, and will carry 100 people. The operation of making them is thus described: "Having selected a sound tree, and cut it the desired length, the outside is first shaped, then the tree is hollowed out till the shell is of proper thickness; this is done with a tool resembling a grubbing-hoe, or narrow adze with a short handle. It is then filled with water, which is heated by throwing in hot stones. The canoe is then covered with a canvas to keep the steam in. This softens the timber, and the sides are distended by cross-sticks to the desired breadth at the center, and tapering towards the ends in lines of beautiful symmetry. It is finished off with a highly ornamental figure-head, and the bulwarks strengthened by a fancy covering board."

Polygamy, with all its attendant evils, is common among the Kaviaks. Their wives are often sisters. Sometimes a man's own mother or daughter is among his wives. If a man's wife bears him only daughters, he continues to take other wives until he has sons. One of the Nasse chiefs is said to have had forty wives. After marriage, women are practically slaves of their husbands. Sometimes they are traded off by the husband for something he may desire. In some sections all the work but hunting and fighting falls upon the women—even the boys transferring their loads and work to their sisters. As though their ordinary condition were not bad enough, the majority of the slaves are women. The men captured in war are usually killed, or reserved for torture; but the women are kept as beasts of burden, and often treated with great inhumanity. The master's power over them is unlimited. He can torture or put them to death at will. Sometimes, upon the death of the master, one or more of them are put to death, that he may have some one to wait upon him in the next world. The bodies of the dead are disjointed and burned. Dead slaves are cast into the sea. They believe in the transmigration of souls from one body to another, but not to animals. Those whose bodies are burned are supposed to be warm in the next world, and the others cold. If slaves are sacrificed at their burial it is thought that the owners are relieved from work in the next world. Among the Nehaunes and Talcolins, when a man dies, his widow is compelled to ascend the burning funeral pile, throw herself upon the body, and remain there until the hair is burned from her head, and she is almost suffocated. She is then allowed to stagger from the pile, but must frequently thrust her hand through the flames and place it upon his bosom, to show her continued devotion. Finally the ashes are gathered up and placed in a little sack, which the widow carries on her person for two years. During this period of mourning she is clothed in rags, and treated as a slave. Among the Chukees the old and feeble are sometimes killed. This is done by placing a rope around the neck, and dragging them over the stones. If this does not kill, then the body is stoned, or speared, and left to be eaten by the dogs. Occasionally the old ask to be killed. Then they are taken, stupefied with drugs, and, in the midst of various incantations, bled to death. In some sections where wood is scarce, the bodies of women are not considered worth the wood that would be consumed in the burning; and they are either cast out, to be consumed by the dogs, foxes, and crows, or cast into the sea as food for fishes. A summary cure for crying babies is to take them to the sea-shore and hold them in the water until they cease crying. As soon as they can walk, children are bathed in the sea daily, and they learn to swim as soon as they do to walk.

Sorcery is prevalent. The words and actions of the shaman (sorcerer) are considered infallible. The office is often hereditary, the son inheriting from the father the various paraphernalia of drum, rattles, masks, charms, etc. The honor of the shaman depends upon the number of spirits which he can control. He has a separate mask, songs, and dances for each. His hair is never to be cut. When a shaman dies his body is left for a day in each of the four corners of his room; on the fifth day it is carried out, dressed in the costume of his order, and deposited in a small burial house. His body is not burned. The Indians are held in abject fear of the conjurers or medicine men. Some of the scenes often witnessed on that coast are thus depicted by a missionary: "An old chief, in cold blood, ordered a slave to be dragged to the beach, murdered, and thrown into the water. His orders were quickly obeyed. The victim was a poor woman. Two or three reasons were assigned for this foul act. One is that it is to take away the disgrace attached to his daughter, who has been suffering for some time with a wound in the

arm. Another report is that he does not expect his daughter to recover, so he has killed this slave in order that she may prepare for the coming of his daughter into the unseen world. Immediately afterwards, crowds of people came running out of the houses near to where the corpse was thrown, and forming themselves into groups at a good distance away, from fear of what was to follow. Presently two bands of furious wretches appeared, each headed by a man in a state of nudity. They gave vent to the most unearthly sounds, and the naked men made themselves look as unearthly as possible, proceeding in a creeping kind of stoop, and stepping like two proud horses, at the same time shooting forward each arm alternately, which they held out at full length for a little time in a most defiant manner. Besides this, the continual jerking of their heads back, causing their long black hair to twist about, added much to their savage appearance. For some time they pretended to be seeking for the body, and the instant they came where it lay they commenced screaming and rushing around it like so many angry wolves. Finally they seized it, dragged it out of the water, and laid it on the beach, where they commenced tearing it to pieces with their teeth. The two bands of men immediately surrounded them and so hid their horrid work. In a few minutes the crowd broke again, when each of the naked leaders appeared with half of the body in his hands. Separating a few yards they commenced, with horrid yells, their still more horrid feast of eating the raw dead body. The two bands of men belonged to that class called "medicine men." Among these "medicine men" there are three general divisions: those who eat human bodies, the dog-eaters, and those who have no custom of the kind. Early in the morning the pupils would be out on the beach, or on the rocks, in a state of nudity. Each had a place in front of his own tribe; nor did intense cold interfere in the slightest degree. After the poor creature had crept about, jerking his head and screaming for some time, a party of men would rush out, and after surrounding him, would commence singing. The dog-eating party occasionally carried a dead dog to their pupil, who forthwith commenced to tear it in the most doglike manner. The party of attendants kept up a low growling noise, or a whoop, seconded by a screeching noise made from an instrument which they believe to be the abode of a spirit. Of all these parties none are so much dreaded as the cannibals. One morning I was called to witness a stir in the camp which had been caused by this set. When I reached the gallery I saw hundreds of Tsimsheans sitting in their canoes, which they had just pushed away from the beach. I was told that the cannibal party was in search of a body to devour, and if they failed to find a dead one, it was probable that they would seize the first living one that came in their way; so that all the people living near the cannibals' house had taken to their canoes to escape being torn to pieces."

ALATRI, a t. in Italy, 6 m. n. of Frosinone. It is the see of a bishop, and shows considerable remains of Pelasgian antiquity. Pop. of commune, 11,370. The ancient name was Alatrium.

ALAU'DA, a genus of birds including larks, chiefly noted as song birds. They are found in all countries, but abound especially in Europe. They are birds of passage, and some of the genus are esteemed for the table.

ALAU'SI, a t. of the republic of Ecuador, South America, in the province of Chimborazo, 70 m. e. from Guayaquil, at an elevation of 7980 ft. above the sea, in a valley of the Andes, on the river Alausi, which flows into the gulf of Guayaquil. The valley of the Alausi is extremely fertile, producing sugar, grain, and fruits. There are manufactures of woolen and cotton cloth in the t. Pop. 6000.

ALAVA, one of the provinces of Spain, 1200 sq. m. Its surface is mountainous, especially in the n., where the Pyrenees form the natural boundary. It is separated from Logrino by the Ebro; the Zadowa and the Ayadak are the other rivers. The soil is fertile, producing wheat, barley, maize, flax, hemp, and fruit. The mountains are covered with forests of oak, beech, chestnut, etc., and contain iron, copper, lead, and marble. Pop. '70, 102,494. Capital, Vittoria.

ALAY, a Turkish ceremony on the assembling of the forces at the breaking out of a war; essentially a public display of the sacred standard of Mohammed, which may be looked upon only by Moslems and touched only by emirs. Once when the standard had been shown, the rule was forgotten, but when remembered all the Christians who had innocently looked at the banner were slaughtered.

ALBACE'TÉ, a t. of Spain, capital of the province of the same name, in Murcia, 138 m. s.e. from Madrid, and a station on the railway from Madrid to Alicante. It stands in a fertile but treeless plain, is built with some degree of regularity, and contains a number of squares and many good houses. It is a place of considerable trade, and has great cattle-fairs in Sept. It is noted in Spain for the manufacture of knives and other steel goods, which, however, are very inferior to those of Sheffield. Pop. 15,150.--The province of Albacete is partly formed from the former kingdom of Murcia, and partly from New Castile. It is generally hilly, and in some parts mountainous, some of its mountains attaining an altitude of 5000 feet; but it contains also rich plains and fertile valleys. Agriculture is in a more advanced state than in most parts of Spain; corn and wine are largely produced, as also oil, hemp, tobacco, saffron, fruits of various kinds, and honey. Great numbers of sheep, goats, oxen, horses, mules, and asses are reared. The

mineral wealth of the province appears to be considerable, but is not turned to much account. The area of the province is 5966 sq.m.; pop. '70, 220,973.

ALBANEN'SES, a division of the sect of Catharists in the 11th c., holding the Gnostic doctrine of two principles, good and evil. They denied the divinity of Christ, and rejected the story of his death, resurrection, and ascension; they denied the resurrection of the dead; and believed the judgment day was passed, and hell's torments are suffered in this life; they also denied free will and original sin, and held that man can impart the Holy Spirit to himself.

ALBANIA, in ancient geography, a country in Asia on the w. side of the Caspian sea and n. of Armenia, corresponding with the modern Daghestan, Schirvan, and Laghistan. It is mostly alluvial, made by the river Cyrus, and is very fertile. The ancient Albanians were described as tall, very strong, and of graceful appearance. They were nomads, and never went into agriculture or trade. The Romans under Pompey first encountered them (65 B.C.) and found a force of 60,000 infantry and 22,000 cavalry contesting the road. Pompey secured a nominal submission, but they continued practically independent.

ALBANS, St., in Vermont. See ST. ALBANS.

ALBANY, a co. in e. N. Y., on the w. side of the Hudson river, 482 sq.m.; pop. '75, 147,530. The surface is hilly and mountainous in the s.; soil good in the valleys, but on high ground sandy and poor. Marl, gypsum, magnesian limestone, and iron are found. Several railroads intersect it, including the great New York Central, the first section of which, from A. to Schenectady, was the earliest railroad in the state. The staple products are wool, grain, hay, milk, butter, and cheese. Co. seat, Albany, which is also the capital of the state.

ALBANY, a co. in Wyoming territory on the Colorado and the n. fork of the Platte, and drained by the Laramie. It is in the Black hills region, and mountainous, Laramie peak being 10,000 ft. above sea-level. The Union Pacific railroad runs through the co. Cattle and wool are the staples. Co. seat, Laramie.

ALBANY, (*ante*), the capital of New York, on the w. bank of the Hudson river, 145 m. n. of New York city, in lat. 42° 39' 49" n., and long. 73° 44' 33" w.; pop. '80, 90,713. It was occupied by the Dutch as a trading-post with the Indians in 1614. Fort Orange was erected in 1623. The settlement was first called Beverwyck, and afterwards Williamstadt. In 1664 it received the name of A. in honor of the duke of York and Albany. It was incorporated as a city in 1686, and became the capital of the state in 1797. In 1806 the corner-stone of the capitol was laid. This building will be removed when the new capitol, the corner-stone of which was laid in 1871, is finished. The new capitol, built of granite, is 390 ft. by 290, covering more than three acres. It will be one of the largest and most expensive buildings of the kind in the country. The other public buildings belonging to the state are the state library, containing more than 90,000 volumes and various interesting revolutionary relics; the state hall, accommodating certain departments of the government; the geological hall, containing extensive collections in geology and natural history; and the state normal school. A. has connections with the e. by the Albany and Boston and the Troy and Boston railroads; with the n. and Canada by the Rensselaer and Saratoga; with the w. and s. by the Harlem, Hudson River, and New York Central, and with the s.w. by the Albany and Susquehanna railroads. It has water communication with the n. by the Champlain canal, with the w. by the Erie canal, and with the s. by the Hudson river. There are two bridges over the Hudson, built by the Hudson River and New York Central railroads. A. is supplied with water in part from an artificial lake a few miles w. of the city, and in part with water pumped from the Hudson. The city has a well organized system of public schools, with a well equipped high school at the head. The A. academy is one of the oldest and best academies in the state, and has a building of rare architectural beauty. The normal school, established in 1844, has sent out more than 2000 graduates. The medical college, organized in 1839, has had connected with it 4492 students, of whom 1455 have graduated (1880). The law school was established in 1851, and has been well attended. The Dudley observatory, dedicated in 1856, has a 13-inch equatorial instrument, a meridian circle, numerous meteorological instruments, and a remarkable calculating and printing engine. Both the medical and law schools, at first independent institutions, now in connection with Union college, constitute Union university. There are forty-seven places of worship: Presbyterian, 9; Roman Catholic, 7; Methodist, 6; Baptist, 6; Episcopal, 5; Lutheran, 4; Reformed, 4; Jewish, 3; Friends', 1; Congregational, 1; Universalist, 1. There are two public hospitals. The penitentiary has always been self-supporting. On the w. side of the city there is a beautiful public park containing 250 acres. The cemetery, 4 m. distant from the city, contains 230 acres. From its numerous railway and water connections A. has become the center of a large amount of business, of which the most important branches are the stove manufacture and the lumber trade.

ALBANY, a maritime division of Cape Colony, Africa, about 450 m.e. of Cape Town; 65 m. long, by 30 or 40 wide; traversed by great Fish river. It produces maize, barley and cotton. Pop. '65, 16,264. Capital, Grahamstown.

ALBATEG'NI I., 929 ; an Arabian astronomer, whose proper name was MOHAMMED IBN JABIR IBN SENÁN ABÚ ABDILLAH, named from Batan in Mesopotamia, of which t. he is said to have been chief. His astronomical observations extended over more than 60 years, and were conducted on the Euphrates and at Antioch in Syria. His chief work, *The Science of the Stars*, was published in 1537 from the original manuscript in the Vatican library. He recast and improved Ptolemy's tables, and came as near to the obliquity of the ecliptic as $23^{\circ} 35'$. His tropical year was nearer than Ptolemy's, being only 2 m. 26 s. short. The Alphonsine tables of the moon's motion were founded upon his observation, and he first substituted sines for chords, and also introduced into trigonometry the use of tangents and versed sines. He was called "The Arabian Ptolemy," and was held to be first of Arabian astronomers.

ALBEMARLE, a co. in Virginia, s.w. of the Blue Ridge and n. of James river, intersected by the Chesapeake and Ohio, and the Virginia and Tennessee railroads ; 700 sq. m. ; pop., '80, 33,630—4944 colored. It has an undulating surface, and rich bottom lands. Co. seat, Charlottesville.

ALBEMARLE, GEORGE MONK, Duke of, 1668-70 ; an English general, chief agent in the restoration of the Stuarts in 1660. In 1625 he was in the expedition against Spain ; served ten years in the Netherlands ; was lieut.-col. in the campaign against the Scots ; led a regiment against the Irish ; and was governor of Dublin until the peace in 1643. Next year in the civil war he was made prisoner by Fairfax, and kept two years in the Tower, but was released on taking the covenant. Cromwell made him lieut.-gen. and chief of artillery, and for good service at Dunbar raised him to gen.-in-chief in Scotland. He took part in the commission to arrange the union of Scotland and England, and went to the former country as governor in 1654, with much difficulty maintaining his rule against the Presbyterians. Charles tried to secure his support, but Monk sent the letter to Cromwell, after whose death Monk declared in favor of Richard Cromwell, assuming the defence of public order. On the 1st of Jan., 1660, Monk crossed the border with 6000 men, joined Fairfax at York, and entered London Feb. 3 without opposition. His intentions were not known until Feb. 28, when he called together the Presbyterian members expelled from parliament in 1648, and created a majority for the king, and Charles was formally declared on the 8th of May. Charles made Monk duke of Albemarle, privy-councilor, chamberlain, and lord lieutenant of Devon and Middlesex. In 1666 he commanded the naval expedition against Holland and was beaten by De Ruyter at Dunkirk, in his turn defeating the Dutchmen at North Foreland.

ALBEMARLE SOUND, an inlet in the coast of North Carolina, 60 m. long and 4 to 15 wide, separated from the ocean by an island, and not appreciably affected by the tides. It receives the Roanoke and Chowan rivers, and is connected with Currituck and Pamlico sounds by natural channels, and with Chesapeake bay by the Dismal Swamp canal. Having only shallow water, the sound is of little value for navigation.

AL'BER, MATTHEW, 1495-1570 ; one of the promoters of the reformation, preaching at Reutlingen. He was put under ban by the pope and the imperial court, but went on preaching, strongly supported by the people. He rejected Latin, and used the native tongue in church services, put out the images, and took a wife. He was summoned before the imperial chambers and charged with nearly 70 distinct heresies, to all of which, save that of speaking disrespectfully of the mother of Christ, he confessed guilty. He was tried, but set free without punishment. A. was a friend and ally of Luther. Some of his sermons, a catechism, and a work on *Providence* have been published.

AL'BERI, EUGENIO, 1809-78 ; an Italian historian. He was several years in the army, but left it in 1830 for literary pursuits. In 1848 he was in the war against Austria as lieutenant-colonel, and was for a time secretary-general in the ministry of war at Rome. He was the author of the *Military History of Prince Eugene of Savoy*, an *Apology for Catharine de Medicis*, and made a collection of important diplomatic reports of Venetian ambassadors of the 16th c. ; he also edited the first complete edition of the works of Galileo. His last work was a eulogy of the Roman Catholic religion from a philosophical and political view.

AL'BERIC I., a Roman ruler in the beginning of the 10th c. ; son of a Lombard nobleman. He married Merozia, daughter of the notorious Theodora, who held the temporal authority, and by union with her he came to be ruler. He joined pope John X. in expelling the Saracens, and ruled the duchy of Spoleto ; but the pope banished him from Rome, and he was murdered in 925. His widow married Guido of Tuscany, and, after his death, Hugo, king of Italy, whom her son Alberic II. expelled.

AL'BERIC II., son of Alberic I., a wise Roman ruler, who died in 954, after a reign of 23 years. He was succeeded by his son Ottaviano, afterwards pope John XII., in 956.

ALBERS, JOHANN FRIEDRICH HERMANN, 1805-67 ; a German physician, professor of pathology at Bonn. He established there an asylum for the treatment of insanity and nervous diseases ; and was director of the pharmacological cabinet. His anatomical atlas, and works on various branches of medical science, are regarded as authority.

ALBERT, a co. in s.e. New Brunswick, on the bay of Fundy; 677 sq.m.; pop. '71, 10,672. The land is good, with bituminous and cannel coal, oil-bearing shales, plaster, and freestone. Coal and plaster are sent to the United States. Chief t., Hopewell.

ALBERT, FREDERICK RUDOLPH, b. 1817; Archduke of Austria, son of archduke Charles, and grandson of Leopold II., first cousin of the father of the reigning emperor. He was distinguished in youth as a cavalry commander, doing good service in the battle of Novara, in 1849. He was governor of Hungary 1851-60; in 1866 he commanded the Austrians in Venetia, and won the victory of Custoza, June 24; but Benedek's defeat at Sadowa, July 3, made his success of no account. He is still field-marshal and inspector general of the Austrian army. A. married, May 1, 1844, archduchess Hildegarde, daughter of Louis I. of Bavaria. She d. April. 2, 1864.

ALBERT, FRIEDRICH AUGUST; b. April 23, 1828, Crown Prince of Saxony, son of king John and queen Amelie. He was a general in the Schleswig-Holstein war, and after his father's accession in 1854 presided over the council of state. In 1866 he commanded the Saxon army coöperating with the Austrians against Prussia, and received a decoration for the behavior of his troops. On the union of Saxony with the n. German confederation, this force became the 12th corps of the n. German army, and with them the prince won high honors at Gravelotte and Sedan, receiving the Prussian iron cross and the command-in-chief of the newly-formed 4th army, at the head of which he entered Paris with the emperor and the German princes. He married, June 18, 1853, Caroline Frédérique Françoise Stéphanie Amélie Cécile, daughter of Gustavus, prince of Vasa, and their children are 2 daughters and 4 sons, the last b. Feb. 25, 1875.

ALBERT EDWARD, PRINCE OF WALES, b. Nov. 9, 1841; heir-apparent of the British throne, eldest son and second child of Victoria and Albert. He is duke of Cornwall, according to the statute of 1337, with annual revenue of about \$250,000. He was created prince of Wales in 1841, and earl of Dublin in 1850; is high steward of Scotland, duke of Rothesay, earl of Carrick, baron of Renfrew, and lord of the isles. He is also a knight of the garter, general in the army, and colonel of the 10th hussars. His early education was under Rev. Henry Birch, rector of Prestwich; Mr. Gibbs, barrister; Rev. C. F. Tarvex, and H. W. Fisher. He visited Canada and the United States in 1860; joined the camp at Curragh in June, 1861; travelled in 1862 in the east with Dean Stanley, visiting Jerusalem; and in 1875-76 made a tour of India. He married March 10, 1863, princess Alexandra, daughter of Christian IX., king of Denmark. Their children are: 1, prince Albert Victor Christian, duke of Cornwall, b. Jan. 8, 1864; 2, prince George Frederick Ernest Albert, b. June 3, 1865; 3, princess Louise Victoria Alexandra Dagmar, b. Feb. 20, 1867; 4, princess Alexandra Olga Mary, b. July 6, 1868; 5, princess Maud Charlotte Mary Victoria, b. Nov. 26, 1869. Prince A. was chosen grand master of free-masons in 1867, succeeding the marquis of Ripon.

ALBERTI, LEON BATTISTA, 1404-72; an Italian architect, and writer on art and poetry, employed by pope Nicholas V. He completed the Pitti palace at Florence, and designed the church of St. Frances at Rimini. His chief book, *De Re Edificatoria*, is highly valued.

ALBERTINELLI, MARIOTTO, 1475-1520; a Florentine painter, the friend, pupil, and imitator of Fra Bartolommeo. His work *The Visitation of Mary and Elizabeth* is in the Uffizi gallery at Florence. Other works are in Munich, and in the Louvre.

ALBERT N'YAN'ZA (the Little Luta Nzige of Speke), a large lake of e. central Africa, one of the reservoirs of the Nile, situated in a deep rock-basin, 80 m. w. of the Victoria N'yanza. The A. N. is of an oblong shape, and, as proved by M. Gessi, one of colonel Gordon's party in 1876, is 140 m. long from n. to s., and 40 m. broad. It is crossed by the equator near its center. On the e., it is fringed by precipitous cliffs, having a mean alt. of 1500 ft., with isolated peaks, rising from 5000 to 10,000 ft. The surface of the lake is 2750 ft. above the sea, and 1470 ft. below the general level of the country; its water is fresh and sweet, and it is of great depth towards the center. The n. and w. shores of the lake are bordered by a massive range of hills, called the Blue mountains, which have an elevation of about 7000 ft. The existence of this vast lake first became known to Europeans through Speke and Grant, who, in 1862, heard of the Luta Nzige as a narrow reservoir forming a shallow back-water of the Nile. See map to article NILE. When Speke and Grant, after the discovery of the Victoria N'yanza, were, in 1863, descending the Nile on their return to Europe, they met, at Gondokoro, Mr. (now Sir) Samuel White Baker (q. v.), who was ascending the river in the hope of meeting with and aiding these travelers. As soon as they informed him of the reputed great lake, Baker agreed to undertake its exploration. Joining a trading party, he traveled south eastwards to Latooka, which he describes as the finest country he had seen in Africa. His course was now s. and s. w., through the countries of Obbo and Madi, crossing the Asua, a tributary of the Nile, on 9th Jan. 1864. Journeying next in a s. and south-eastward direction over uninhabited prairies and swampy hollows, he came upon the Nile at the Karuma falls, lat. 2° 17' n., at the identical spot where it had been crossed by Speke and Grant. Being prevented, by the jealousy of king Kamrasi, from following the course of the stream to the westward, he was forced to proceed, by slow marches southward on the w. side of the Somerset or Nile, to M'rooli, leaving which, his course lay s. w. on the s. side of

the Kafoor river. After a toilsome march of 18 days from M'rooli, the party came in sight of the glorious expanse of water. Baker says: "Weak and exhausted with more than 12 months' anxiety, toil, and sickness, I tottered down the steep and zigzag path, and in about 2 hours reached the shore. The waves were rolling upon a bank of sand; and as I drank the water, and bathed my face in the welcome flood with a feeling of true gratitude for success, I named this great basin the Albert N'yanza, in memory of a great man who had passed away."

The spot where the party first reached the lake, Vacovia, is in lat. $1^{\circ} 14'$ n., $30^{\circ} 40'$ e. Embarking thence in canoes, the party coasted north-eastward, and in 13 days arrived at Magungo, lat. $2^{\circ} 16'$ n., near the mouth of the Somerset river. At this part, the lake was under 20 m. in width, and appeared to stretch away in a n.w. direction. From Magungo, 250 ft. above the lake, the travelers had a view of the Nile valley for 15 or 20 m. northwards. Ascending the Somerset, at a distance of 25 m. from its mouth, the canoe-voyage was interrupted by a grand cataract 120 ft. high, which was named the Murchison falls. The explorers proceeded south-eastwards for about 30 m. to Kiseona, and then a march n.e. for about the same distance brought them to the Karuma falls, where they first entered the lake-region. The name Somerset is adopted from Speke's first map, in order to distinguish that river from the Nile proper. - It issues from the Victoria N'yanza at the Ripon falls, and flowing n.w. and w. for about 230 m., it enters the A. N. within 30 m. of its northern extremity, and soon quits it to form the true Nile. From the Ripon falls for 30 m. n., and from the Karuma to the Murchison falls, 45 m., the Somerset forms a series of rapids. The A. N. receives the drainage of a great equatorial mountain range, where rain falls during 10 months of the year. The scenery of the lake is described as extremely beautiful. Salt, which is very abundant in the soil on the eastern shores of the lake, is now the only article of trade to the inhabitants. Formerly, Magungo was a large t., when the trade from Karague, in lat. 2° s., was conducted in large boats sent by Rumanika, the king of the country, with cowrie shells and brass bracelets from Zanguebar to be exchanged for ivory.

ALBINUS or WEISS, BERNHARD SIEGFRIED, 1697-1770: a German anatomist. He studied at Leyden under Boërhaave and Rau, and also in Paris under Valliant and Winslow. In 1719, he lectured on anatomy and surgery in Leyden; two years later he succeeded his father in the professorship of the same branches. He speedily became one of the most famous teachers of anatomy in Europe, and not only students but practising physicians resorted to his rooms. In 1745, he was appointed professor of the practice of medicine, his brother, Frederick Bernard, taking the chair of anatomy. He was twice rector of his university, and was an associate of the learned societies of London and other capitals.

ALBION, the seat of justice of Orleans co., N. Y., 40 m. n.e. of Buffalo: pop. 775, 5487. The Erie canal and Niagara branch of N. Y. Central railroad pass through it. There are several churches, an academy, a female seminary, banks, and newspapers.

ALBIR'CO, a double star in the head of the swan; interesting to spectroscopists for the different color lines of its components; the larger star is orange, and the smaller one blue.

ALBO'NI, MARIETTA, b. 1824, or 1826; an Italian contralto, pupil of Rossini. She made her début at the age of 15 at the Communal theater of Bologna, where her success led to an engagement at La Scala, Milan. She made rapid progress, and in 1846-47 sang in all the principal cities of Europe, in London at Covent garden in rivalry with Jenny Lind, who was at Her Majesty's theater. In 1852 she visited the United States, remaining over a year, and singing in the chief towns in opera and concert. Her celebrity was owing to the power, fine quality, flexibility, and compass of her voice, a true contralto compassing $2\frac{1}{2}$ octaves, and ranging as high as a mezzo-soprano; her florid style gaining great effect from her vivacity and grace of action. She married count Pepalo, of the Roman states, but kept her maiden name on the stage, appearing in opera at Munich as late as 1872.

AL BORÂK, (the lightning), the name of the creature—some say camel—on which Mohammed was believed to make journeys between earth and heaven.

ALBOSTAN', a t. of Asiatic Turkey, in the pashalic of Marash, and 29 m. n.e. by n. from Marash. Pop. estimated at 9000.

ALBOX', a t. of Andalusia, Spain, in the province of Almeria, 42 m. n.e. from Almeria, on a small affluent of the Almazora, which divides the t. into two parts. It has some good streets and buildings, and a fine square. Blankets, coarse linen and hempen fabrics, and earthenware are manufactured. There are also corn and oil mills. There is a great annual fair in Nov., lasting for a fortnight. Pop. 7430.

ALBRECHTSBERGER, JOHANN GEORG, 1736-1809; an Austrian musician. He studied under Mann, the Vienna court organist, and became one of the most learned and skillful contrapuntists of his age. In 1772 he was appointed court organist, and in 1792 kapellmeister of St. Stephen's cathedral. Among his pupils were Beethoven, Hummel, Moscheles, Seyfried, and Weigl. His published works consist of preludes, fugues, and sonatas for the piano and organ, and string quartettes; but the greater portion of his labors are in manuscript, in possession of prince Esterhazy. His most valuable

service to music was in his theoretical works, which substantially superseded earlier treatises.

ALBRET, JEANNE D', 1528-72, queen of Navarre, only daughter of Henry II. and Margaret, sister of Francis I. Jeanne married Antoine de Bourbon. She was celebrated for her intellectual strength and personal beauty. She embraced Calvinism, while her husband adhered to the Roman church, and asked the pope to annul his marriage; but Antoine died soon afterwards; and, in spite of Spanish menaces and Roman intrigue, Jeanne kept her possessions. In 1567 she declared the reformed religion established in the kingdom; and in 1569, with her children Henry and Catherine, she brought a small band of Huguenots to Coligny at La Rochelle, where, after the murder of the prince of Condé, she was looked upon as the only support of the Protestants. She wrote prose and verse, and some of her sennets have been published.

ALBRIGHT, JACOB, a Lutheran minister, 1759-1800; b. Pennsylvania; founder of the **EVANGELICAL ASSOCIATION** (q.v.).

ALBUCA'SIS, or **ABOO-L-KASIM**, d. 1110; the most celebrated of Arabian writers on surgery; supposed to have practiced in Cordova. His chief work on anatomy, physiology, and the practice of medicine and surgery, is of great value, the treatise on surgery being the best that has come to us from antiquity, and important for tracing the progress of the art.

ALBU'GO is a term employed in surgery to designate the white opacity that often follows ulceration of the cornea of the eye. In infancy, the comparatively rapid interchange of materials will often diminish to a great extent both the extent and density of these spots, but in after-life they do not undergo similar absorption, nor are they amenable to surgical relief.

ALBUMENIDS, or **PROTEIDS**, organic bodies in animals or plants; chief constituents of blood, nerve, muscle, glands, and other organs in animals; in smaller proportion but important in vegetable life. They consist of carbon, 52.7 to 54.5; hydrogen, 6.9 to 7.3; nitrogen, 15.4 to 16.5; oxygen, 20.9 to 23.5; sulphur, 0.8 to 1.6. They are soluble in alkalies, mineral acids, acetic acid, and in a degree in water; insoluble in ether, and nearly so in alcohol. Strong alkalies change them to leucine, tyrosine, oxalic acid, carbonic acid, ammonia, etc., according to temperature. In solutions they are precipitated by excess of mineral acids, by potassic ferrocyanide, with acetic or hydrochloric acid, by acetic acid in presence of a considerable quantity of alkaline or alkaline-earthly salt, gum arabic or dextrine, by mercuric nitrate, or Millon's reagent.

ALBUMINURIA, or **BRIGHT'S DISEASE**, albumen in the urine, with dropsical tendency, and organic change in the substance of the kidneys. Acute A. may commence with a chill followed by fever, dry skin, furred tongue, and rapid pulse; sometimes the countenance, or even the whole body, is swollen; urine greatly diminished, and dark red, as if bloody; dull pain about the loins, pallid skin, and thirst; loss of appetite, nausea, and vomiting. Rarely is there a complete suppression of urine, which is almost certainly fatal. Tested by heat and nitric acid, the urine shows so much albumen as to change almost into a mass of jelly. Under the microscope the sediment of the urine shows blood corpuscles, renal epithelium, and small fibrinous casts of the uriniferous tubes, containing entangled in them epithelial cells and blood globules. The causes of acute A. are exposure to cold, especially when the body is exhausted by fatigue, recent illness, or unsuitable diet; but excessive indulgence in alcoholic liquors is the most fruitful cause. Other diseases, in which the blood is in an altered condition, are sometimes preceded or followed by A., as acute rheumatism, typhus fever, erysipelas, and purpura; it may also follow scarlet fever, when it generally terminates favorably. No patient can be considered safe from A. so long as any trace of albumen can be found in the urine. The treatment is easy; let the patient put on flannel, and stay in bed, if possible, in an evenly heated room, carefully guarding against exposure or cold currents of air; diet to be simple and digestible, and not over-plentiful; on or near recovery, preparations of iron are useful to improve the blood and impart strength.

Chronic A. is sometimes thoroughly seated before suspected, and persons have died as was supposed from apoplexy, when the real cause was long-established albuminuria. But usually the symptoms are clear: loss of flesh, strength, and appetite, or, if appetite hold, flatulence and dyspeptic symptoms; the body becomes pallid, sallow, and looks waxy; the skin dry; swellings under the eyes, particularly in the morning, and the ankles œdematous at night; pain in the back, but generally not severe; there is irritability of the bladder, and a frequent desire to urinate; urine sometimes copious, but often less than average, pale and of low specific gravity, from 1.004 to 1.012. On test the quantity of albumen in the urine varies; sometimes it is large, often only a trace, or hardly that. As the disease goes on, dropsy of the abdomen is apt to occur, and be the chief cause of suffering; anasarca is present, and all the cellular tissue is infiltrated with serum. There is a tendency to sleep which may lapse into coma, or alternate with epileptic convulsions. Bronchitis is apt to occur in severe form, or pneumonia to come insidiously and run rapidly to a fatal issue; rheumatism is not infrequent. The variety of diseases which collect in a case of chronic A. is of course in consequence of the condition of the blood—the alterations in the blood being the diminished amount of globules,

the hematine sometimes reaching only a third of its proper quantity, and the presence of urea. The duration of the disease varies: those exposed to the weather and who lack the comforts of life, often die suddenly, while in persons in condition to avoid exposure and fatigue it may last for years, leaving the victims a good degree of the enjoyments of life; but their situation is always precarious, and serious or fatal disease may at any moment come on from trifling causes. The main cause of chronic A. is intemperance in eating or drinking, but especially in the use of distilled and fermented liquors. Exposure to cold, wet, fatigue, want, and mental anxiety are occasionally causes, and there are cases where no cause can be traced. Where neither dropsy, nor other difficult complications demand attention, the treatment should be more in careful clothing, diet, and exercise than in medicines. Flannel next the skin is indispensable, and exposure to wet and cold must be guarded against; unusual exercise, physical or mental, is forbidden; diet should be moderate and nutritious, and above all taken with regularity; fermented liquors should be avoided, although if long habit render them necessary the patient should select that which best agrees with him. See BRIGHT'S DISEASE, *ante*.

ALBURG, a t. in Grand Isle co., Vermont; pop. '70, 1716. It has an alkaline and mineral spring, the waters of which are said to be useful in gout and rheumatism.

ALCA'ICS, the name of certain kinds of verse, from Alcæus, their reputed originator. One kind is of five feet, viz, a spondee or iambic, an iambic, a long syllable, and two dactyls; the second kind of two dactyls and two troches. The A. ode is composed of several strophes, each of four verses, the first two of which are always alcaics of the first kind; the third verse is an iambic dimeter-hypercatalectic, consisting of four feet and a long syllable; and the fourth verse is an alcaic of the second kind. Ex:

Non possidentum multa vocaveris
Rectè beatum; rectius occupat
Nomen beati, qui deorum
Muneribus sapientur uti.

ALCAIDE, or ALCAYDE, a Moorish title, applied by Spanish and Portuguese writers to a military officer having charge of a fortress, prison, or town. It is to be distinguished from Alcalde, which indicates a civil officer.

ALCALA' DE GUADAI'RA (*the castle of the Guadaira*), the ancient Carthaginian *Hien-ippa* ("place of many springs"), a t. of Andalusia, Spain, in the province of Seville, and 7 m. e. by s. from Seville. It stands near the Guadaira, partly on a hill, so that some of the streets are very steep, and is overlooked by the ruins of an ancient Moorish castle, once one of the most important, as its ruins are still among the finest, in Spain. This t. is beautifully situated, and on account of the salubrity of its climate is much resorted to as a summer residence by the inhabitants of Seville. It is celebrated for producing the finest bread in Spain; there are more than fifty bakeries in the t., and Seville is chiefly supplied from it. The water-mills and mule-mills for making flour are more than 200 in number, and, with the bakeries, give employment to a great part of the population. Every process connected with the making of bread is conducted with the greatest care. Seville is also supplied with water from the hill above A., which is perforated by tunnels, some of them 6 m. in length, forming underground canals. Some of the tunnels are believed to be Roman works, but most of them are known to have been made by the Moors. The water flowing through the subterranean canals is as clear as crystal. The neighborhood of A., is fertile, producing corn, wine, oil, silk, honey, and fruits, also sheep and oxen. Pop. '7000.

ALCALA' LA REAL' (*the Royal Castle*), a city of Andalusia, Spain, in the province of Jaen, and 26 m. n.w. from Granada. It is situated on a conical hill, in a narrow valley, on the n. side of the mountains which separate the province of Jaen from that of Granada, at an elevation of nearly 3000 ft. above the sea. It is a very picturesque t., irregularly built, with steep and narrow streets and bold towers. It was the stronghold of the alcaide Ibn Zaide; and being taken in 1340, by Alonzo XI. in person, it obtained the name *Real*. It has a hospital, formerly an abbey, a very fine building. The neighborhood produces grain and fruits of the finest quality, and the inhabitants of the t. are mostly engaged in agriculture. There is some trade in wine and wool. Pop. 11,521.

ALCAM'ENES, lived 448 to 400 B.C., a famous Athenian sculptor, pupil of Phidias, commended for skill in his art by Cicero, Pliny, and others. With Phidias and Polyclethus, he formed the great triumvirate of Greek sculptors. He is said to have competed with his master in creating statues of Minerva, but overlooked the height at which his was to be seen and made it too small, though otherwise perfect. The "Venus Urania" in the temple at Athens was his masterpiece.

AL'CAMO, a t. of Sicily, in the province of Trapani, and 23 m. e. from Trapani, in the Val di Mazzara, on the high-road between Palermo and Trapani. It is said to have been founded by the Arabs, on their first invasion of Sicily in 827. The original t. stood on a hill, and long retained a Moslem population, who were driven out by the emperor Frederick II. in 1233, and the new t. was built at the foot of the hill. A. is surrounded by a battlemented wall of the 14th c. The houses are mostly mean, and the

streets irregular and dirty; the whole place having an air of poverty and decay. It contains, however, some fine old churches and palaces. Pop. '72, 20,890.

ALCAÑIZ', a t. of Aragon, Spain, in the province of Teruel, 63 m. s.e. from Saragossa. It is situated on a rising ground on the right bank of the Guadalupe, which is here crossed by a bridge of nine arches. It is a well-built t., with wide paved streets, and a number of squares. It has a magnificent collegiate church, in which are many fine tombs and pictures. There are manufactures of silk, woollen, and coarse linen fabrics, hats, and soap; there are also flour and oil mills, and some trade in grain, cattle, and the manufactures of the t. Pop. 6490.

ALCATRAZ', or **PELICAN ISLAND**, in the bay of San Francisco, n.w. of the city, fortified by the federal government, and having a light-house on its highest ground. The island is less than a third of a mile in length. It commands the entrance to the bay.

ALCAUDET'E (anc. *Uditunum*), a t. of Andalusia, Spain, in the province of Jaen, and 22 m. s.w. from Jaen. It is situated in a hollow, enclosed by three hills, on an affluent of the Guadalquivir, is overlooked by the ruins of an ancient castle, and is tolerably well built. There are fine pictures in some of the churches. Oil and rope making, weaving, and agriculture are the chief employments of the inhabitants. Grain, silk, oxen, sheep, goats, pigs, mules, and asses are produced in the neighborhood. Pop. 6242.

ALCAVALA, or **ALCABA'LA**, a duty formerly charged in Spain and her colonies on transfers of property, whether public or private. It was begun in 1341 by Alphonso XI. at 10 and increased to 14 per cent of the selling price of all commodities, raw or manufactured, and charged as often as they were sold or exchanged. This monstrous impost was enforced, nearly ruining the commerce of the kingdom, down to the invasion of Napoleon. Catalonia and Arragon purchased from Philip V. exemption from the tax, and, though still burdened heavily, were in a flourishing state in comparison with districts covered by the Alcovalla.

ALCAZ'AR DE SAN JUAN' (anc. *Alec*), a t. of New Castile, Spain, in the province of Ciudad Real, and 49 m. n.e. from Ciudad Real on the Madrid and Alicante railway. It is regularly built, and has two good squares. There are manufactories of soap, nitre, and gunpowder. Pop. 7540.

ALCAZ'AR KEBIR', a city of Morocco, 80 m. n.w. of Fez; once famous as the rendezvous for Moorish invasions of Spain, but now greatly decayed. Not far from the city is the river Elmalassen, where, in 1578, the Moors defeated the Portuguese, and killed their king, Sebastian. Pop. 6000.

ALCHEMY (*ante*). Basil Valentine and Paracelsus, recognizing the importance of the strange substances which escaped from the retorts of the masters of A. in the transmutation of bodies, gave them the name of mercury; the elders called them souls or spirits; Van Helmont studied them more closely, and gave them the name of gas. He was acquainted with carbonic acid under the name of woody gas; but his ignorance of the action of the oxygen of the atmosphere prevented him from making the fundamental distinction between experiments performed in a closed vessel and in one open to the air. Priestley, Lavoisier, and Scheele, by the use of the test tube and the balance, weighed and tested the results of ancient A., and thence modern chemistry was born; but the work had already been begun by men of genius, such as Bernard Palissy, Boyle, Homberg, the Geoffreys, Margraff, Bergman, and Roule, the master of Lavoisier, who may be called the Diderot of chemistry. It is also true that the most important discoveries in chemistry have been made by men who combined with chemical experiments a marked taste for alchemic theories; for instance, Glauber, ablest of mystics; Kunkel, who thought he had found in the "shining pills" of his *phosphorus mirabilis* as efficacious a remedy as the potable gold in which he also believed; Glaser, the alchemist, master of Lemery, who has been called the father of chemistry; Robert Fludd, and others. Soon after chemistry was settled as a science there was a crusade in search of the philosopher's stone. Among French seekers was De Lisle, who died in the Bastille of wounds inflicted by his keepers in trying to extort his secret; among Englishmen, Dr. Price, who committed suicide to avoid a public trial of his pretended discoveries. Doubtless the main idea of A. is yet alive. One of the greatest of French chemists, Dumas, thought as to the theoretical possibility of making gold, that a solution might be found in the doctrine of isomerism; and the more famous English savant, Sir Humphrey Davy, refused to decide that the alchemists must be wrong. In 1796 two German physicians founded a society for the investigation of the transmutation of metals, and this society and its branches existed as late as 1820. A text-book of chemistry by Baudrimont (1844) says "a certain Mr. Javary has obtained very surprising results by following the prescriptions of the ancient alchemists, so that there is hope of at last seeing the great work succeed." Another work by Fiffereau (1856) affirms that the metals are compound bodies, and that silver can be changed into gold. The literature of A. is enormous, including such names as Roger Bacon, Lord Bacon, Becher, Fludd, Hermis, Trismegisti, Glauber, Kunkel, Paracelsus, Querceteau, Basil Valentine, Peter Gregory, etc., not to mention Greek, Roman, and Arabic writers.

ALCIA'TI, ANDRÉ'A, 1492-1550; an Italian jurist, skillful in his exposition of the laws, for which he is praised by De Thou. He published many legal works, annotations on Tacitus, and *Emblems* or moral sayings in Latin verse, greatly admired. His *History of Milan* was published in 1625.

ALCINOÛS, a mythical king of the Phæacians, grandson of Neptune. He was immortalized in the *Odyssey* for the relief and entertainment extended to Ulysses by his daughter Nausicaa. The subjects of A. loved pleasure, but they were skillful seamen, and he is described as having been a good prince.

AL'CIPHRON, a Greek epistolary writer, probably contemporary with Lucian. His letters, 116 of which have been published, are in pure Attic dialect, and are considered models of style. The imaginary authors are common people, fishermen, courtesans, and parasites. The letters are valuable as picturing Athenian private life at that period.

ALCIRA (anc. *Sabaticula*), a t. of Spain, in the province of Valencia, 20 m. s. by w. from Valencia, on an island in the river Xucar, the two branches of which are here crossed by stone bridges. It is surrounded by old walls, with strong towers. The principal streets are wide, but the t. is ill built. The inhabitants are chiefly employed in the manufacture of earthenware, the production of silk, and agriculture. The surrounding country is much intersected by canals, exhibiting an admirable specimen of the system of irrigation introduced by the Moors. Pop. 15,400.

ALCMÆ'ON, in Greek legend, son of Amphiarus and Eriphyle, and brother of Amphilocus. He was a leader of the Epigoni who went against Thebes to revenge the death of their fathers in the war of the seven. After the fall of Thebes, A. killed his mother, as he had been ordered by his father. For this act madness came upon him, and he was always pursued by the furies. He married Arsinoë, daughter of Phlegon, king of Psophis, and also Calirrhoe, daughter of the river-god Acheilus. The last wife coveted the necklace and peplos of Harmonia, once belonging to his mother, which he had given to Arsinoë, and he got them from Arsinoë by the false pretense of wishing to dedicate them at Delphi in hope to cure his madness. When his father-in-law heard that he had got the treasures for his new wife, he sent his sons, who killed A.; but A.'s sons by Calirrhoe took bloody vengeance, at her instigation. After his death A. seems to have been worshiped, and had altars at Thebes and elsewhere; his tomb was shown at Psophis, and he had a statue at Delphi.

ALCMÆ'ON, a Greek natural philosopher of the latter part of the 6th c. B.C., b. in Crotona, s. Italy, and said to have been a pupil of Pythagoras. He was the first who practiced dissection of animals; but it is a question whether he ever operated on a human body. He thought the human soul was immortal, because, like the heavenly bodies, it contained within itself a principle of motion. The eclipses of the moon he thought were occasioned by her shape, like that of a boat.

ALCME'NE, in Greek mythology, daughter of Electryon, king of Mycenæ, and wife of Amphitryon; mother of Hercules, by Jupiter, who came to her in the form of her husband. She was the mother of Iphicles by Amphitryon.

ALCOCK, Sir RUTHERFORD, b. London, 1809; British diplomatist and author. He held various posts in the naval, medical, and diplomatic services in Spain, 1833-44; and was British consul at Foo-chow, Shanghai and Canton in China; consul-general to Japan, 1859; and later, minister plenipotentiary. Owing to the ignorance then existing concerning the true relations of the tycoon and the mikado—that of vassal, instead of equal—his course was beset with many difficulties, and attempts were made upon his life in 1860 and 1862. He was one of the four foreign ministers who ordered the bombardment of Shimonoseki, and then exacted an indemnity of \$3,000,000. For this he was recalled. A. was made K.C.B. in 1863, and was minister plenipotentiary to China 1865-71. He is now president of the royal geographical society; and has published *Medical History of the British Legion in Spain*, *Life's Problems*, *The Capital of the Tycoon*, *Three Years in Japan*, and *Art and Art Industries in Japan*.

ALCOHOL is a limpid, colorless liquid, of a hot, pungent taste, and having a slight but agreeable smell. It is the characteristic ingredient of fermented drinks, and gives them their intoxicating quality. Looking at the extraordinary consumption of these liquors, and to the extensive application of A. for other purposes, it becomes one of the most important substances produced by art.

There is only one source of A.—namely, the fermentation of sugar or other saccharine matter. Sugar is the produce of the vegetable world. Some plants contain free sugar, and still more contain starch, which can be converted into sugar. The best vegetable substances, then, for yielding A. are those that contain the greatest abundance of sugar or of starch. See **DIASTASE**, **FERMENTATION**, and **DISTILLATION**.

Owing to the attraction of A. for water, it is impossible to procure pure A. by distillation alone. Common spirits, such as brandy, whisky, etc., contain 50 or 52 per cent of A.; in other words, they are about half A., half water. *Proof-spirit*, which is the standard by means of which all mixtures of A. and water are judged, contains 57.27 per cent by volume, and 49.50 per cent by weight, of A. The specific gravity of proof-spirit is 918.6; and when a spirit is called *above proof*, it denotes that it contains an excess

of A.; thus, *spirit of wine*, or rectified spirit, with specific gravity 828, is 54 to 58 over-proof, and requires 54 to 58 per cent of water to be added to it, to bring the strength down to that of proof-spirit; whilst the term *under proof* has reference to a less strong spirit than the standard. See **AREOMETER**. The most primitive method of learning the strength of A. was to drench gunpowder with it, set fire to the spirit, and if it inflamed the gunpowder as it died out, then the A. stood the test or proof, and was called proof-spirit. The highest concentration possible by distillation gives 90 per cent of A., still leaving 10 per cent of water. In order to remove this, fused chloride of calcium, quicklime, or fused carbonate of potash, is added to the alcoholic liquid, the whole allowed to stand for twelve hours, and then the spirit may be distilled off quite free from water. Spirit of wine may also be deprived of its remaining water by suspending it in a bladder in a warm place; the bladder allows much of the water to pass through and evaporate, but little of the A. The latter method is called Soemmering's process, and depends on the different degrees of rapidity with which the bladder admits of water and A. passing through it. Thus, introduce into one bladder 8 oz. of water, and into a second, 8 oz. of A., and allow both bladders to be similarly exposed on a sand-bath, till all the water has evaporated through the pore of the membrane, which will be accomplished in about 4 days, and it will then be observed that whilst 8 oz. water have made their exit from the bladder, that only one ounce of A. has thus evaporated, and 7 oz. still remain in the bladder. This experiment explains why smugglers, a few generations ago, could supply a whisky which was stronger, and hence esteemed preferable, as they carried the whisky in bladders around their persons, and the water escaping therefrom in much greater proportion than the A., a stronger spirit was left.

A. is used medicinally, both internally and externally. The more common form for internal use is brandy, and is that generally recommended by physicians. As a *stomachic stimulant*, A. is used in sea-sickness and indigestion. As a *stimulant and restorative*, it is employed with advantage in the later stages of fever. It is also employed internally as a *powerful excitant* to prevent fainting during operations, and to assist in restoration in cases of suspended animation. In cases of diarrhea, unaccompanied by inflammation, it is often of great benefit. Externally, A. is applied to stop hemorrhage, to harden the cuticle over tender parts, as the nipples of females for some time before delivery, and to feet which have been blistered from long walking or tight-fitting shoes.

Absolute or anhydrous A. has a specific gravity of 793 at the temperature of 60°. It boils at 173°, and has not been frozen by any cold hitherto produced. Reduced to a temperature of -139°, A. becomes of an oily and greasy consistence; at -146° it assumes the aspect of melted wax; and at -163° it gets still thicker, but does not congeal at the lowest attainable temperature. This property of non-freezing at any degree of cold to which the earth is subjected, has led to the employment of A. colored red by cochineal, in the thermometers sent out to the arctic regions. It acts as a poison by abstracting the water from the parts it touches. It is highly inflammable; its combustion yielding only carbonic acid and water. When mixed with water, heat is evolved, and a condensation takes place. The formula of A. is $C_4H_6O_2$. In 100 lbs., therefore, of A., about 53 are carbon, 13 hydrogen, and 34 oxygen. Besides the A. consumed in wine, beer, and spirits, it is much employed in pharmacy and in the arts. It is a powerful solvent for resins and oils; and hence is employed in the preparation of varnishes. In Germany, a cheap spirit made from potatoes is much used for cooking on a small scale. See **METILLATED SPIRIT**; and **ALCOHOL** and **ALCOHOLS**. The use and abuse of alcoholic drinks will be considered under **FOOD AND DRINK**, and **TEMPERANCE**.

ALCOHOL, PHYSIOLOGICAL AND POISONOUS ACTION OF. A. in a concentrated form exerts a local irritant action on the membranes and tissues of the animal body. According to various circumstances, as, for example, its greater or less dilution, the quantity in which it is administered, the emptiness or fullness of the stomach, and the nature of the animal on which the experiment is made, A. may either act as a gentle stimulus, which assists the digestive process, or it may excite such a degree of irritation as may lead to the disorganization of the mucous membrane. It is well known that dilute A., in contact with animal matter, at a temperature of from 60° to 90°, undergoes acetic fermentation, and it was maintained by Leuret and Lassaigne that a similar change took place in the stomach. It appears, however, that only a small part of the A. undergoes this change; and it is the small part thus changed which produces the penetrating and disagreeable acidity which characterizes the eructations and vomited matters of drunkards. A. is, however, for the most part, rapidly absorbed in an unchanged state, either in the form of liquid or vapor; and this absorption may take place through the cellular (or connective) tissue, the serous cavities, the lungs, or the digestive canal. This is shown by the experiments of Orfila, who fatally intoxicated dogs by injecting A. into the subcutaneous cellular tissue, or by making them breathe an atmosphere charged with alcoholic vapor; and by Rayer, who injected about half an ounce of proof-spirit into the peritoneum of rabbits, which almost immediately became comatose, and died in a few hours. It is, however, only with absorption from the intestinal canal that we have to deal, in relation to man. Almost the whole of this absorption is effected in the stomach, and it is only when A. is taken in great excess, or is mixed with a good deal of sugar, that any absorption beyond the stomach occurs. The rapidity of the absorption varies

according to circumstances. The absorption is most rapid when the stomach is empty and the drinker is fatigued; while the action is delayed by a full stomach, and especially by the presence of acids, tannin, or the mucilaginous and saccharine ingredients of many wines. Fatty matters have a similar action, and hence it is that (as we learn from Dr. Perrin's elaborate article on "The Physiology of Alcohol," in the *Dictionnaire Encyclopédique des Sciences Médicales*, vol. ii. p. 577, 1865) "we must account for the English habit of taking a very fat soup, or even a glass of oil, before proceeding *aux libations*." The mode of action of A. on the system, and the various phenomena of drunkenness, are sufficiently described in the article INTOXICATION. Previously to the year 1860, the actual presence of A. in the blood had been attempted to be proved by many chemists, but no satisfactory evidence upon this point had been adduced; and its presence had also been sought for in the expired air and in the secretions, but the results were equally doubtful; and Liebig's view, that A. was oxidized in the blood, and after passing through various stages of oxidation, was finally converted into, and eliminated from, the system as carbonic acid and water, was almost generally accepted. In that year, however, an elaborate work, abounding in well-devised experiments, and entitled *Du Rôle de l'Alcool et des Anesthésiques dans l'Organisme*, was published by three well-known physiological inquirers, MM. Lallemande, Perrin, and Duroy, and received a prize, with high commendation, from the academy of sciences. In this work, it seems to be proved beyond all doubt that "A. stays for a time in the blood, that it exercises a direct and primary action on the nervous centers, whose functions it modifies, perverts, or abolishes, according to the dose; that neither in the blood nor in the expired air are any traces to be found of its transformation or destruction; that it accumulates in the nervous centers, and in the liver; and that it is finally discharged from the system by the ordinary channels of elimination."—Perrin, *op. cit.*, p. 590. So far from carbonic acid being one of its final products, it is now ascertained that A. causes a diminished exhalation of that gas. The A., when it has entered the blood, is diffused over the whole organism, remains during, apparently, different periods in different organs, and almost immediately begins to escape; and if as much wine or spirit is taken as contains 80 grammes, or rather more than $2\frac{1}{2}$ oz. of A., the urine passed some hours afterwards yields, by distillation, an amount of A. capable of burning; and the elimination by this channel continues for 16 hours or more. The elimination by the lungs continues for about 8 hours. The authors believe that in man the chief excreting channel is the skin, but they have no data to show how long this elimination is continued. They further show that when a quantity of *vin ordinaire*, equivalent to half an ounce of A., has been taken by a healthy man, the presence of A. may be readily detected in the blood, the expired air, the urine, and the cutaneous exhalation in the course of half an hour after the wine has been taken. In animals destroyed when intoxicated, the portions of the brain and of the liver are found to yield, weight for weight, considerably more A. than the blood. The fact of the retention and accumulation of A. in the nervous centers and liver, tends to throw much light on the special diseases of drunkards.

The action of any kind of alcoholic drink in moderate doses, is that of a somewhat rapid stimulant. The bodily and mental powers are for a time excited beyond their ordinary strength, after which there is a corresponding depression. Although the A. which is introduced into the system cannot act as a true food (for in that case it would not pass through the system unchanged), it indirectly takes the place of food, by diminishing the wear and tear of the system, and thus rendering less food sufficient: a fact which is proved by chemical experiments, showing that less carbonic acid and urea (which are the ultimate products of the carbonaceous and nitrogenous tissues) are given off when A. is administered in moderation, than when it is totally withheld.

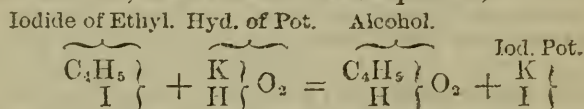
The influence of an excessive dose of A. has been demonstrated by various series of experiments on animals, and unfortunately by many observed cases in man. If a poisonous dose of A. is given to an animal (a dog, for example), its action on the nervous system is the first point that is noticed. The dog ceases to exhibit the ordinary control over its muscular movements, which seem to be no longer under the influence of the will. It walks with uncertain and doubtful steps, till the hind-legs lose their power, the fore-legs still preserving some activity. The general sensibility becomes more or less abolished, and the animal can no longer see or feel. Soon afterwards the respiration fails; and finally, the circulation is arrested, and life ceases with the last beat of the heart.

As cases are of frequent occurrence in which it is almost impossible for non-professional persons (the police, for example) to distinguish between extreme drunkenness and certain other morbid conditions, as apoplexy, concussion of the brain, and opium-poisoning, it may be practically useful if we lay down a few rules on this subject. In concussion and in very extreme intoxication, there is profound coma or sleepiness; but in the latter case the odor of the breath removes all difficulty of diagnosis. The most difficult cases are those in which the symptoms of concussion or apoplexy are associated with an alcoholic odor of the breath; in such cases the head should be most carefully examined for marks of violence, and every effort should be made to obtain a history of the case from those who had previously seen the patient. In poisoning by opium or laudanum, the peculiar smell of the drug may generally be detected in the breath (a test which, however, fails if morphia has been taken). In poisoning by opium, the face is

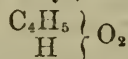
pale, and the pupils of the eyes are contracted; while in drunkenness, the face is flushed, and the pupils are generally dilated. Another difference (to which Dr. A. S. Taylor calls attention) is this, that while perfect remissions are rare in poisoning by opium, in poisoning with A. the patient often recovers his senses, and subsequently dies. In either kind of poison, the stomach-pump should be used, and the ejected contents of the stomach may facilitate our diagnosis. A sulphate of zinc emetic should be prescribed, if there is no stomach-pump at hand; and after the stomach has been well cleared out, coffee and other strong stimulants should be given.

ALCOHOLS. During the last few years, our knowledge of the properties of ordinary alcohol and of the general class of bodies to which the term *Alcohols* is applied, in consequence of their resemblance, in certain chemical reactions, to ordinary alcohol, has been very much enlarged. We shall first make a few supplementary additions to the article **ALCOHOL**, and shall then proceed to notice the class of *Alcohols*.

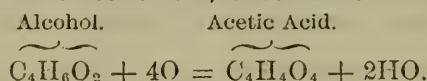
In the article **SYNTHESIS**, a method is described by which Berthelot artificially formed alcohol from inorganic compounds. He has since devised another method, which throws much light on the nature of the composition of this substance. On combining the hydro-carbon ethylene, or olefant gas (C_2H_4), with hydriodic acid (HI), we obtain iodide of ethyl (C_2H_5I); and by prolonged boiling with caustic potash, the former compound may be converted into alcohol, as is shown in the equation,*



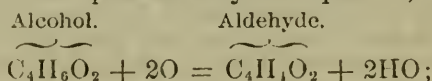
Here it is seen that the iodine of the iodide of ethyl abstracts the potassium from the hydrate; while the group C_2H_5 , which constitutes ethyl, is substituted for the metal. Alcohol may thus be regarded as a hydrate analogous to hydrate of potash; and if the latter is regarded as water in which one atom of hydrogen has been replaced by one of potassium, so alcohol may be regarded as water in which one atom of hydrogen has been replaced by the monatomic radical ethyl. Hence, while alcohol was regarded, according to the compound radical theory, as hydrated oxide of ethyl, C_2H_5O, HO , it is now regarded, according to the old theory of types (q.v.), as water in which one atom of hydrogen is replaced by one of ethyl, C_2H_5 , and is expressed by the formula



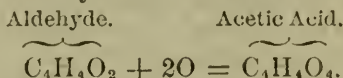
The action of oxygen on alcohol requires a brief notice. In a nearly anhydrous state, alcohol has little tendency to oxidation, but when freely diluted and exposed to the air, it rapidly becomes oxidized into acetic acid, a result shown by the equation,



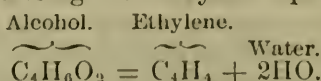
This conversion is, however, not a direct one, an intermediate compound, termed aldehyde (q.v.), being first formed, which is rapidly oxidized into acetic acid. The oxidation of alcohol into aldehyde is represented by the equation,



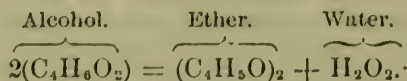
while the further oxidation of aldehyde into acetic acid is represented by



Chlorine and alcohol react singularly on each other—the final products being hydrochloric acid, and a very remarkable colorless oily fluid of a peculiar penetrating and irritating odor, called chloral, which is represented by the formula, $C_2Cl_2HO_2$. Dilute alcohol distilled with chloride of lime (bleaching-powder) yields chloroform; and this is the most economical process for obtaining this invaluable compound. Heated with an excess of sulphuric acid, alcohol loses all its oxygen in the form of water, and is converted into ethylene, the result being shown by the equation,



A less complete dehydration, under the action of sulphuric acid, converts alcohol into ether. The process is a complicated one, but the final result is expressed by the equation,



* We have expressed the substances in the following equation in accordance with the theory of types, because the substitution of the ethyl for the potassium is thus more clearly seen than in the corresponding equation, $C_2H_5I + 2KO = C_2H_5O_2 + KI$.

The best tests for discovering the presence of alcohol are—1. Its hot, pungent taste, its odor, and its great volatility. 2. Absorbed in asbestos, it burns with a pale blue flame, which deposits no carbon on white porcelain; and when burned in the mouth of an inverted test-tube, containing a few drops of the solution of baryta, it produces a well-marked deposit of carbonate of baryta—carbonic acid and water being the products of its combustion. 3. It dissolves camphor. 4. It sets free green oxide of chromium when boiled with a few drops of a saturated solution of bichromate of potash, mixed with sulphuric acid. The chromium test, originally discovered by Dr. Thomson in 1846, is that on which the French physiologists Lallemand, Perrin, and Duroy relied in their investigations regarding the presence of alcohol in the blood, urine, expired air, etc. See ALCOHOL, PHYSIOLOGICAL ACTION OF.

Alcohol is of a double use to the chemist, inasmuch as it furnishes a cleanly and valuable fuel when used in the spirit-lamp, and possesses remarkable solvent powers without in general exerting chemical action on the dissolved substances. It dissolves many of the gases more freely than water, as, for example, nitrous oxide, carbonic acid, phosphuretted hydrogen, cyanogen, and the hydrocarbons, as, for instance, ethylene. Amongst the mineral substances which it dissolves may be mentioned iodine, bromine, loric acid, the hydrates of potash and soda, the chlorides of calcium, strontium, magnesium, zinc, platinum, and gold, the perchloride of iron, corrosive sublimate, the nitrates of lime, magnesia, etc.; whilst among organic matters, it dissolves many organic acids, bases, and neutral bodies, the resins, the soaps, and the fats, which latter, however, dissolve more freely in ether than in alcohol. The alcoholic solutions of substances used in medicine are called *Tinctures*.

In the article POLYATOMIC ALCOHOLS (q.v.), the general characteristics of the class of bodies now known as alcohols are briefly given. The term *alcohol* is now so far extended as to include all neutral compounds of carbon, hydrogen, and oxygen, which react upon acids in such a way that water is eliminated while ethers are produced. We shall endeavor to elucidate the nature of the different classes of alcohols by giving one example of each principal kind. In a *monatomic alcohol* (see POLYATOMIC ALCOHOLS), half the hydrogen in the primary type for water, $\left. \begin{smallmatrix} \text{H} \\ \text{H} \end{smallmatrix} \right\} \text{O}_2$, is replaced by an organic radical; thus in methyl-alcohol, or wood-spirit, one equivalent of hydrogen, H, is replaced by one equivalent of the organic radical methyl, C_2H_5 —the formula for methyl-alcohol being $\left. \begin{smallmatrix} \text{C}_2\text{H}_5 \\ \text{H} \end{smallmatrix} \right\} \text{O}_2$, or $\text{C}_2\text{H}_4\text{O}_2$; while in ordinary vinic or ethyl-alcohol there is a similar replacement by the radical ethyl, C_4H_5 —the formula for this (the ordinary) alcohol being $\left. \begin{smallmatrix} \text{C}_4\text{H}_5 \\ \text{H} \end{smallmatrix} \right\} \text{O}_2$, or $\text{C}_4\text{H}_6\text{O}_2$.

The *monatomic alcohols* are more abundant than all the polyatomic alcohols together. There are several series of them, of which the most important are alcohols whose radical is of the form $\text{C}_{2n}\text{H}_{2n+1}$ (as C_2H_5 , C_4H_9 , C_6H_{13}), and which are represented by the formula $\left. \begin{smallmatrix} \text{C}_{2n}\text{H}_{2n+1} \\ \text{H} \end{smallmatrix} \right\} \text{O}_2$. Of these, twelve are at present known. They are intimately related to the fatty acids, whose general formula is $\text{C}_{2n}\text{H}_{2n}\text{O}_4$, which may be formed from the alcohol by oxidation— O_2 being substituted for H_2 . Thus alcohol, represented generally by $\text{C}_{2n}\text{H}_{2n+2}\text{O}_2$, yields the fatty acid represented by $\text{C}_{2n}\text{H}_{2n}\text{O}_4$; for example, methyl-alcohol, $\text{C}_2\text{H}_4\text{O}_2$, yields formic acid, $\text{C}_2\text{H}_2\text{O}_4$; ethyl-alcohol, $\text{C}_4\text{H}_6\text{O}_2$, yields acetic acid, $\text{C}_4\text{H}_4\text{O}_4$, and so on. The three highest alcohols of this set, whose formulae are $\text{C}_{32}\text{H}_{64}\text{O}_2$, $\text{C}_{54}\text{H}_{108}\text{O}_2$, and $\text{C}_{65}\text{H}_{130}\text{O}_2$, known as cetyllic, cerotyllic, and melissyllic alcohols, are solid waxy or fatty matters. There is one alcohol whose radical is $\text{C}_{10}\text{H}_{17}$, and whose formula is $\text{C}_{10}\text{H}_{18}\text{O}_2$ —viz., the solid substance known as Borneo camphor (see RESINS); and in cholesterin (an ingredient of the bile), whose formula is $\text{C}_{52}\text{H}_{104}\text{O}$, the radical is $\text{C}_{52}\text{H}_{43}$. *Diatomic alcohols* belong to the secondary water type, $\left. \begin{smallmatrix} \text{H}_2 \\ \text{H}_2 \end{smallmatrix} \right\} \text{O}_4$, in which, as before, half the hydrogen, H_2 (which, in this case, is two atoms), is replaced by one atom of a compound radical. The radical is often marked with two dashes in such cases as these, to indicate that one of its atoms replaces two of hydrogen. Thus, the most important diatomic alcohol, glycol, is represented, according to the theory of types, by the formula $\left(\left. \begin{smallmatrix} \text{C}_2\text{H}_4 \\ \text{H}_2 \end{smallmatrix} \right)'' \right\} \text{O}_4$, its radical being C_2H_4 . In the *triatomic alcohols*, we take $\left. \begin{smallmatrix} \text{H}_3 \\ \text{H}_3 \end{smallmatrix} \right\} \text{O}_6$, or the tertiary type of water, and replace half the hydrogen—viz., three atoms, by one atom of an organic radical, which we consequently mark with three dashes. The well-known substance glycerine is the only example of the triatomic alcohols. Its radical is C_3H_5 ; and as this replaces three atoms of hydrogen, its typical formula is $\left(\left. \begin{smallmatrix} \text{C}_3\text{H}_5 \\ \text{H}_3 \end{smallmatrix} \right)''' \right\} \text{O}_6$; its ordinary formula being $\text{C}_3\text{H}_8\text{O}_6$, which throws no light on its internal constitution. One *tetratomic* and one *hexatomic* alcohol have been discovered.* The

* A second tetratomic alcohol, propylphycite, $\text{C}_6\text{H}_8\text{O}_8$, has been lately artificially formed by Carius; and dulcitol, which is isomeric with mannitol, is now regarded as a second hexatomic alcohol. We mention these facts to show what constant additions are being made to this class of bodies.

former is erythrite, a substance obtained from the litmus lichen; one atom of its radical, C_4H_6 , replaces four atoms of hydrogen, and its typical formula is written $\left. \begin{matrix} (C_4H_6)^{iv} \\ H_4 \end{matrix} \right\} O_8$; while the latter is mannite (the chief ingredient of the well-known substance manna, described in the article SUGAR), in which one atom of the radical, $C_{12}H_8$, replaces six atoms of hydrogen, its typical formula being $\left. \begin{matrix} (C_{12}H_8)^{vi} \\ H_6 \end{matrix} \right\} O_{12}$, while its ordinary formula is $C_{12}H_{14}O_{12}$.

We have entered somewhat fully into the consideration of this somewhat difficult subject, because it is one of great general interest, as showing the close chemical connection between various groups of bodies of apparently totally different natures. No one could have anticipated, twenty years ago, that such very different substances as cholesterol and mannite were allied to ordinary alcohol.*

ALCONA, a co. in n. e. Michigan, on lake Huron; 630 sq.m.; pop. '74, 1214; drained by the Ausable and branches. It was but recently organized.

ALCORA, a town of Valencia, Spain, in the province of Castellon, 43 m. n.n.e. from Valencia. It is tolerably well built. Many of the inhabitants are employed in the manufacture of earthenware and the distilling of brandy. Corn, grapes, silk, and hemp are among the principal productions of the neighborhood. Fruits are a chief article of export. Pop. 5609.

ALCORN, a co. in n.e. Mississippi, on the Tennessee border; 460 sq.m.; pop. '70, 10,431—2768 colored. The surface is level, and soil fertile. Co. seat, Corinth.

ALCOTT, AMOS BRONSON, b. Connecticut, 1799. He was the son of a farmer, and when young, went to Virginia as a peddler. Returning to New England, he became a successful teacher of children in Boston, remarkable for sympathy and skill in dealing with the very young; but he gave up his school, and at Concord, Mass., began the study of natural theology, civil and social science, and reforms, especially in education and diet. He visited England in 1842, and brought back with him Charles Lane and H. G. Wright, and the three founded a community, near Harvard, Mass. The Englishmen soon went home, the community farm was sold, and A. went to Concord, where he has since lived as a peripatetic philosopher, speaking occasionally to the public in other places, when invited, on a wide range of subjects, from divinity to practical cookery. He is admired for brilliancy and suggestiveness. His points of importance in treating of man physically are: race, complexion, diet, and government. He has written *Orphic Sayings*, *Tablets*, *Concord Days*, etc. In his theology he has always cultivated the mystical element, and of late years his teachings show a decided tendency towards the evangelical view of Christianity, though he declines to attach himself to any sect.

ALCOTT, LOUISA MAY, b. 1833; daughter of A. Bronson; when very young a writer of fairy tales, and later of *Hospital Sketches*, for which the materials were secured while she was a nurse in the army, during the war of the rebellion. *Little Women*, *Little Men*, *An Old Fashioned Girl*, are among her popular works.

ALCOTT, WILLIAM ALEXANDER, 1798-1859; b. Connecticut; cousin of A. Bronson, an American author. When young he worked on a farm in summer and taught school in winter. He studied medicine at Yale, and assisted Woodbridge in preparing his geographies, at the same period editing the *Juvenile Rambler*, the first serial for children issued in America. He also edited *Annals of Education*, and worked with Gallaudet, Hooker, and others for school reform, gaining a premium for a paper *On the Construction of School Houses*. In 1832, he removed to Boston and published *The Young Man's Guide*. Within 20 years of lecturing he visited more than 20,000 schools, making addresses to most of them. His works are more than a hundred in number, nearly all of a reformatory character.

ALCYONE, the most brilliant of the seven stars or pleiades, and supposed by Maedler to be the central sun in reference to which our sun with its planets and all other known systems are moving, or perhaps revolving within some almost incomprehensible period of time. Argelander has shown that this cannot be true.

ALCYONE, or HALCYONE, in classic legend, daughter of Æolus, and wife of Ceyx, so inconsolable on the death of her husband that she threw herself into the sea, whereupon she and her husband were changed into kingfishers as a reward of their mutual devotion.

ALDAN', a river of Siberia, in the government of Yakutsk; rises in 55° n. and 125° e. It flows 300 m. n.e., turns n.w. and joins the Lena 400 m. below Yakutsk. Its length is unknown, but it is probably between 900 and 1300 m.; it is in part navigable.

* There can be no doubt that the sugars will soon be universally admitted to be alcohols, as Berthelot suggested a few years ago. In one of our best and latest works on chemistry, Naquet's *Principes de Chimie, fondée sur les Théories Modernes* (2d ed., 1867), cane-sugar, meltilose, trehalose, mycose, mélézitose, lactose, and parasaccharose (most of which are described in the article SUGAR, q.v.) are placed under the head of "Alcohols Polyglucosides."

ALDAN MOUNTAINS, a branch of the Stanavoi mountains running from the main chain in the direction of Aldan river. Some think the name ought to be given to the whole mountain system of eastern Siberia.

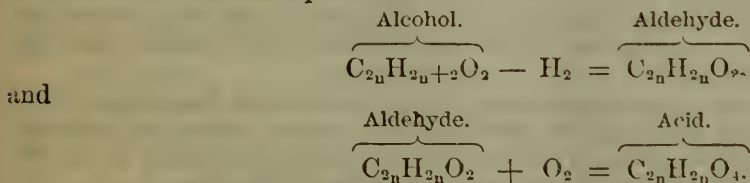
ALDBOROUGH, a t. in England, 16 m. n.w. of York. A. formerly had two members of parliament, but was disfranchised by the reform act of 1832. The t. is remarkable for ancient ruins. It was the Isurium of the Romans, and remains of aqueducts, buildings, tessellated pavements, implements, urns, and coins have been found. Pop. '71, parish, 2165; town, 502.

ALDEGONDE', SAINT, PHILIP VAN MARNIX, born in 1538-58; a Dutch statesman, educated at Geneva, a strong Calvinist and a leader among the nobles who protested against the establishment of the inquisition in the Netherlands in 1566. He was the friend of William of Orange, who gave him several important missions, and sent him in 1572 to the first Dutch states-general at Dort. He was envoy to Paris, to London, and to the diet of Worms. As burgomaster of Antwerp in 1584 he defended that city against the duke of Parma, and in 1590 he was again ambassador to France. He left a metrical version of the Psalms, and at his death was translating the Bible into Flemish.

ALDEGREVER, or **ALDEGRAF**, HEINRICH, 1502-62; a German painter and engraver. From his style, which closely resembles his master's, he has been called the "Albert Durer of Westphalia." His engravings put him in the first rank of "little masters." Specimens of his paintings are very rare.

ALDEHYDE ($C_4H_4O_2$) is a volatile fluid produced by the oxidation and destructive distillation of alcohol and other organic compounds. Its discoverer, Döbereiner, called it *light oxygen ether*; its present term is an abbreviation of *alcohol dehydrogenitum*, its composition being represented by that of alcohol from which two atoms of hydrogen have been abstracted. In the article on this subject in Watts's *Dictionary of Chemistry*, ten different modes of obtaining this substance are given. It is sufficient here to state that the best modes of preparing it may be found in that work, or any recent treatise on organic chemistry. It is a thin, transparent, colorless liquid, very inflammable, burning with a blue flame, and having a spec. gr. of 0.8, a boiling-point of about 71° , and a pungent, suffocating odor. It mixes in all proportions with water, alcohol, and ether, and dissolves sulphur, phosphorus, and iodine. As is shown in the article **ALCOHOLS**, it constitutes an intermediate stage in the oxidation of alcohol into acetic acid. A. must be regarded as a monobasic acid, inasmuch as it contains one atom of hydrogen replaceable by a metal. Thus, when potassium is gently heated with A., one atom of H is replaced by one of K, the resulting compound being aldehydate of potash, $C_4H_3KO_2$. Various salts of this kind may be formed, of which the most important is aldehydate of ammonia, or aldehyde-ammonia, $C_4H_3(NH_4)O_2$, which is obtained in transparent shining crystals, and is a compound that has led chemists to the discovery of a large number of very remarkable derivatives.

ALDEHYDES are a class of organic compounds, intermediate between alcohols and acids; the ordinary aldehyde, described in the preceding article, being, as we have seen, intermediate between ordinary alcohol and its corresponding acid—viz., acetic acid. It has been shown in the article **ALCOHOLS** that the compounds of this class related to the fatty acids are represented by the general formula, $C_{2n}H_{2n+2}O_2$, while the corresponding acids have the formula, $C_{2n}H_{2n}O_4$. Each aldehyde is derived from the corresponding alcohol by the abstraction of two atoms of hydrogen, and each aldehyde is converted into its corresponding acid by the addition of two atoms of oxygen. These essential facts are shown in the equation.



NIL A. of the form $C_{2n}H_{2n}O_2$, corresponding to $n = 2, 3, 4, 5, 7, 8, 11, 12$, and 16, are at present known, the simplest being ordinary or acetic acid, $C_2H_4O_2$, and the highest being palmitic aldehyde, $C_{32}H_{32}O_2$. It is obvious that, as far as is yet known, there is not of necessity always an aldehyde intervening between the alcohol and corresponding acid; for example, methylic and caproylie alcohols have not yet yielded an aldehyde.

Amongst A. not connected with the preceding group may be mentioned various organic compounds which have been recently shown to belong to this class—thus, acrolein, $C_3H_4O_2$, is acrylic aldehyde; camphor, $C_{20}H_{16}O_4$, is campholic aldehyde; bitter-almond oil, $C_{14}H_{16}O_2$, is benzoic aldehyde; oil of cumin, $C_{16}H_{18}O_2$, is cuminic aldehyde; oil of cinnamon, $C_{18}H_{18}O_2$, is cinnamic aldehyde; salicylic acid, $C_{14}H_{10}O_4$, is salicylic aldehyde; and anisylous acid, $C_{16}H_{14}O_4$, is anisyllic aldehyde. Most of these A. are obtained directly from plants, and either exist in them ready formed, or are given off as volatile oils on distillation with water.

For the best account of the aldehydes with which we are acquainted, we must refer to the chapter on that subject in the second edition (1867) of Naquet's *Principes de*

Chimie, fondée sur les Théories Modernes, vol. ii. pp. 384-405, in which will be found a full account of the aldehydes derived from the monatomic alcohols, of the modes of preparing them, of the properties common to all aldehydes, and those specially belonging to different series, the rational formulæ and constitution of aldehydes, and the aldehydes derived from diatomic alcohols or glycols, in which this chemist includes not only salicylous, salicylic, and glycolic aldehydes, but that remarkable synthetic product, furfural (q. v.).

ALDEN, JAMES, a rear-admiral in the U. S. navy; b. Maine, 1808; d. San Francisco, 1877. He entered the navy as midshipman, 1828; in 1841, was made lieutenant, captain in 1863, commodore in 1866, and retired with rank of rear-admiral in 1872. He was in the Wilkes exploring expedition, and in the naval operations of the Mexican war; and 1848 to 1860 in the coast survey. In the rebellion he commanded the steamer *South Carolina*, and in 1862 the sloop-of-war *Richmond*. He was engaged in the capture of New Orleans, and the attacks of Vicksburg and Port Hudson; commanded the sloop *Brooklyn*, the leading ship of the line, in 1864, and was in the Mobile bay and Fort Fisher conflicts. In 1868, he was commandant of the California navy yard; in 1869, chief of the bureau of navigation in the navy department; and in 1871 he took command of the European squadron.

ALDEN, JOHN, b. England, 1599, d. Duxbury, Mass., Sept. 12, 1687; one of the pilgrims to Plymouth, Mass. He was one of the signers of the compact in the cabin of the "*Mayflower*." A. married Priscilla Mullens, to whom his first proposal was in behalf of Miles Standish, but who indicated her preference for A. over the soldier. A poem by Longfellow has this incident for its theme. He was a magistrate for more than 50 years, and greatly assisted in the government of the infant colony.

ALDEN, JOSEPH, D.D., LL.D., b. New York, 1807; graduated at Union college, 1829; studied theology at Princeton, and was ordained pastor of a congregational church in Massachusetts, 1834. He was professor in Williams college, 1835-52; in Lafayette college, 1852-57; president of Jefferson college, 1857-67, and subsequently principal of the New York state normal school at Albany.

ALDEN, NOAH, an advocate of religious liberty in Massachusetts, as against the old union of church and state, and a member of the convention that ratified the federal constitution. For 30 years, beginning 1766, he was pastor of the Baptist church in Bellingham, and he represented that t. in the state constitutional convention.

ALDEN, TIMOTHY, D.D., 1771-1839; b. Massachusetts; graduated at Harvard; pastor of a congregational church in Portsmouth, 1799-1805, and a prominent teacher there, and in Newark, Boston, New York, and Cincinnati. He was the founder and first president of Alleghany college, Meadville, Pa., and author of *Missions Among the Senecas*, a book of epitaphs, and other works.

ALDENHOVEN, a t. in Rhenish Prussia, n.e. of Aix-la-Chapelle, pop. '67, 3041. A. is noted as the place of a victory by the Austrians over the French, under Dumouriez, Mar. 1, 1793.

ALDHELM, 656-709; an English divine during the Saxon heptarchy; the first Englishman who wrote Latin poetry. He was abbot of Malmesbury, bishop of Sherborne, and afterwards of Salisbury. He is known by two works, *De Virginitate* and *De Laude Virginium*.

ALDINI, GIOVANNI, 1762-1834; nephew of Galvani, and brother of count Antonio Aldini, a student of natural science. He held the chair of physics at Bologna. His chief work was in experiments to apply science to useful purposes; galvanism, gas for light-houses, and fire-proof cloth receiving most attention. He was one of the founders of the national institute of Italy; received the British royal society's gold medal; and was made knight of the iron crown, and counselor of state at Milan.

ALDOBRANDINI, a noble Florentine family, among whom were Sialvestro, 1499-1558; Ippolito (pope Clement VIII.), 1536-1605; and Francesco, created a prince by Clement. The "Aldobrandine Wedding," a famous picture, dating probably from the time of Augustus, was found in 1606 on the site of the garden of Mæcenæ.

ALDRICH, THOMAS BAILEY, b. Portsmouth, N. H., 1836. He intended to enter college, but on his father's death went into his uncle's counting-room in New York, remaining three years, frequently writing verses for the newspapers; was reader for a publishing house, then a regular writer for the *New York Evening Mirror* and an editor of the *Home Journal* and the *Saturday Press*. He has contributed to the leading magazines. His first volume of poems was *The Bells*, 1855; the next year was published his remarkably successful poem, *Babe Bell*, followed by *Daisy's Necklace*, *Course of True Love*, *Out of His Head*, and *Story of a Bad Boy*. He has been editor of *Every Saturday* since its foundation.

ALDRIDGE, IRA, 1810-67, the "African Roscius." There are two accounts of him, one that he was a mulatto born near Baltimore about 1810, apprenticed to a German ship-carpenter, and accompanying Edmund Keen to England as a servant; returned in 1830 or '31, and appeared on the stage in Baltimore; failed and returned to England, where he gained high reputation. The other story is that he was the son of a native of

Senegal, who was brought here as a slave, became a Christian and pastor of the African church in Church st., New York; that Ira was born in that city about 1805, and intended for the ministry; that he was fond of dramatic performances, but his father disapproved, and sent him to England to be educated for the ministry; that he still preferred the drama, and made his debut at the Royal theater, London, in "Othello," and was remarkably successful. He played also "Zanga," "Orozembo," "Rolla," and other characters that were color-parts throughout England. On the continent he took high rank in Shakspeare's tragedies and kindred characters, and he had presents of crosses and medals from the emperors of Austria and Russia, and the king of Prussia. He was actual or honorary member of many of the great academies. He married an English woman, whom he left a widow in London. At the time of his death he was on his way to St. Petersburg, where he had an engagement and expected to appear in New York in the following September.

ALDROVANDI, ULYSSES, one of the most distinguished naturalists of the 16th c., was born at Bologna, probably about the year 1522. He was descended from a noble family, and received an excellent education, partly in his native city and partly in Padua. Some of his religious opinions having been called in question, he traveled to Rome in 1550, to vindicate himself; and whilst there, studied Roman antiquities, and wrote a treatise on ancient statuary. At Rome, he formed the acquaintance of Rondelet. On his return home, he devoted himself to the study of botany, and having taken his degree in medicine at the university of Bologna in 1553, he was in the following year appointed to the chairs of philosophy and logic, and also to the lectureship on botany. He practiced medicine for some time in Bologna, and appears after a short time to have exchanged some of the chairs which he held in the university for that of natural history, to the study of which science he applied himself with great devotedness. He established the botanical garden at Bologna in 1567. He was much employed, during many years, in forming a museum of natural history, collecting specimens with great assiduity, and employing draughtsmen to make figures of them for the great work on natural history which he contemplated. In the pursuit of his favorite science, he traveled into different countries, but no particular record of his travels remains. Inspiring others with a zeal similar to his own, he had the pleasure of seeing his museum rapidly increase. He finally bequeathed it to the senate of Bologna, and it became the foundation of the splendid public museum of that city, where many of A.'s specimens remain to this day. He left behind him also at his death a prodigious mass of valuable manuscripts, which still remain in the public library of Bologna, a store of which proper use has never yet been made, and in which there is probably much correspondence of eminent men, interesting as showing the first steps of progress of the science of natural history, after the long dormancy of the middle ages. All his studies and collections were made subservient to his work on natural history; the first volume of which—on birds—appeared in 1599. Six volumes appeared during A.'s life; other seven were published under the direction of his colleagues and pupils after his death, which took place in 1605. It has been stated in many notices of his life, and was long commonly believed, that, by his scientific pursuits, A. reduced himself to circumstances of great poverty, and that he died in a public hospital at Bologna; but the story, although Bayle has adopted it in his dictionary, rests on no sufficient evidence, and there is reason to think that it is not true. It is difficult to procure a complete edition of the works of A., and the volume on minerals is especially rare. A. has been censured for excessive copiousness in things of little importance, and at best merely serving to illustrate his subject and render it interesting. He shows, however, great anxiety to set forth all that is known on every subject of which he treats; he writes of natural history in a way which shows that he greatly loves the science, and at the same time with a devout and reverent spirit, always beholding in the works of creation the traces of the Creator's hand.

ALDSTONE, or **ALSTON**, sometimes called **ALSTON MOOR**, a market-t. of the co. of Cumberland, England, 30 m. e.s.e. from Carlisle. The parish of A. contains extensive and very productive lead mines, formerly belonging to the earls of Derwentwater, and now to the lords commissioners of the admiralty. The t. has manufactures of worsted yarns and flannel. It is situated in a mountainous district on the declivity of a steep hill, near the confluence of the Nent and south Tyne. The pop. is about 2500. The produce of the lead mines has fallen off considerably during the past 15 years. Pop. of parish '71, 5680.

ALEANDRO, GIROLAMO (HIERONYMUS), 1480-1542, studied at Venice, and got great reputation for learning, and in 1508 went to Paris, on invitation of Louis XII., to be professor of belles-lettres and rector in the university. He was sent on missions to Rome, where Leo X. kept him as librarian of the vatican. In 1520 he was papal nuncio at the coronation of Charles V., and next year Luther's chief opponent in the diet of Worms, going to the utmost extremes to suppress the doctrines of the reformer, and becoming so violent that he lost the friendship of Erasmus. He drew up the diet against Luther, and after the diet went as nuncio to the Netherlands, where he kindled the fires of persecution—two monks of Antwerp, the first martyrs of the reformation, being burned at his instigation, at Brussels. In 1523 Clement VII. sent him to the court of Francis I., and he was taken prisoner with that monarch at the battle of Pavia (1525),

and released only after paying a heavy ransom. In 1538, he was made cardinal and took the title of St. Chrysogonus. The vatican library has his letters about Luther.

ALEGAM'BE, PHILIPPE, 1592-1652 : superior of the house of Jesuits in Rome, and secretary to their general. He wrote biographies of Jesuit martyrs and a life of Cardan.

AL'EMAN, LOUIS, b. 1390: archbishop of Arles and cardinal of St. Cecelia. He was one of the presidents of the council of Basle in 1431, and led the party for the supremacy of the councils over the pope in opposition to the claims of Eugenius IV., and on his motion the latter was deposed and Felix V. elected in his stead. Eugenius thereupon deposed Felix, and deprived A. of his ecclesiastical dignities, but these were restored by Nicholas V. in 1447—Felix having resigned on A.'s advice. In 1527, A. was canonized by pope Clement VII.

ALES', or ALESSE', ALEXANDER, original name ALANE, 1500-65 ; a native of Edinburgh. He studied at St. Andrew's, graduating in 1515 ; became canon of the collegiate church, and contended vigorously for scholastic theology as against the reformers. On the execution of Patrick Hamilton his views entirely changed, though he kept the fact a secret for a long time. For a sermon against dissoluteness among the clergy he was put in prison, whence he escaped to the continent, traveled in Europe, and settled in Wittenberg, where he made the acquaintance of Melancthon. Meantime he was tried in Scotland, and condemned for heresy, without a hearing. After Henry VIII. broke with the church of Rome, A. went to England, and was cordially received by the king and Cranmer and Cromwell, and through the latter's influence he was appointed lecturer on theology at Cambridge. In 1539, he was again compelled to exile himself in consequence of the statute known as the "Six Articles." He was at once chosen to a theological chair at Frankfort-on-the-Oder, and was the first professor who taught the reformed doctrines. In 1543, he quitted Frankfort for Leipsic, where he filled a similar professorship until his death.

ALESH'KI, a t. in s. Russia, on a branch of the Dnieper, 8 m. e. of Kherson; pop. '67, 8484.

ALESSANDRES'KU, GREGORY, b. 1812; a Roumanian poet. He served in the army ; was a liberal politician, and was banished to a monastery for publishing satires reflecting upon the government. In 1849 A. was minister of finance. He wrote *Reminiscences, Impressions, Letters, and Fables*.

ALESSAN'DRI, BASIL, b. 1821; a poet of Roumania. He was prominent in the liberal operations in 1848, and was for a short time minister of foreign affairs. His *Popular Ballads of Roumania* is a work well known.

ALEXANDER, a co. forming the s.w. corner of Illinois, between the Ohio and Mississippi rivers; 245 sq.m.; pop. '70, 10,564. It is low, flat, and subject to inundations in some portions, but produces good corn and wheat. The Illinois Central railroad has its southern terminus at Cairo in this county. Co. seat, Thebes.

ALEXANDER, a co. in n.w. North Carolina, bounded on the s. by the Catawba river; 300 sq.m; pop. '70, 6868—611 colored. The chief products are wheat, corn, and oats. Co. seat, Taylorsville.

ALEXANDER, ALEXANDER HUMPHREYS, b. 1783. He claimed the earldom of Stirling on the ground of blood, alleging that his mother was great-great granddaughter of John, fourth son of the last earl of Stirling, and that all intermediate heirs were extinct. A trial was had in Scotland, where his pretensions were exposed, his old documents were shown to be forgeries, and he retired into obscurity. One of his claims was the inheritance of Nova Scotia, granted to the first earl of Stirling.

ALEXANDER, ARCHIBALD, D.D., 1772-1851; b. Virginia; a Presbyterian minister of Scotch descent. He was self-educated; was led to religious study by the great revival of 1789-90, was licensed to preach in 1791, and spent some years as itinerant missionary. In 1789 he became president of Hampden Sidney college, resigning in 1801; came north, and in 1802 married the daughter of the blind preacher, Rev. Dr. Waddell. He was installed pastor of Pine street Presbyterian church, Philadelphia, in 1807; in 1810, he received the degree of D.D.; and was elected president of Union college in Georgia, though this was not known to his family until after his death. The theological seminary in Princeton college was established by the Presbyterian church in 1811, and Dr. A. was by common consent chosen its first theological professor, holding the place until his death. His best known work is *Outlines of the Evidences of Christianity*, which has been reproduced in many languages, and is a text-book in colleges. He wrote *Treatise on the Canon of the Old and New Testaments, History of the Patriarchs, Essays on Religious Experience, History of African Colonization, History of the Log College*, and a *History of the Israelitish Nation*. A work of his on *Moral Science* was published after his death, and he left several religious works unpublished.

ALEXANDER, JAMES WADDELL, D.D., 1804-59; b. Virginia; son of Dr. Archibald; a graduate of Princeton in 1820, where he was a tutor. He was a Presbyterian minister in Charlotte co., Va, 1825-27; in Trenton, N. J., 1828; and in Duane street church, New York city, 1844-51, when he took charge of the Fifth avenue church, officiating there until he died. He was professor of ecclesiastical history and church government

at Princeton. He wrote for the *Biblical Repository*, *Princeton Review*, and the American tract society; and under the name of "Cæsariensis" for the *Literary World*. Among his many works are *Consolation*; in *Discourses on Select Topics addressed to the Suffering People of God*, *Thoughts on Family Worship*, *Plain Words to a Young Communicant*, *Thoughts on Preaching*, *The American Mechanic and Workingman*, *Discourses on Christian Faith and Practice*, *Geography of the Bible*, etc., and a biography of his father.

ALEXANDER, JOHN HENRY, 1812-67; b. Maryland; author of *Treatise on Mathematical Instruments*, *Contributions to the History of Iron*, *Dictionary of Weights and Measures*, *International Coinage*, and other valuable works.

ALEXANDER, JOSEPH ADDISON, D.D., 1809-60; b. Philadelphia; son of Archibald, and one of the most eminent American biblical scholars. He was a pupil of his father, graduated from Princeton in 1826, and subsequently was adjunct professor of ancient languages and literature in his alma mater. In 1852, the general assembly of the church elected him to the chair of biblical and ecclesiastical history, which he occupied until his death. He published *The Psalms Translated and Explained*, *The Prophecies of Isaiah*, a treatise on primitive church government, and many essays in the current magazines. His last work was in connection with Dr. Hodge on a commentary on the New Testament, portions of which have been published.

ALEXANDER, STEPHEN, LL.D., b. New York state, 1806; educated at Union college and Princeton theological seminary; tutor in Princeton, and adjunct professor of mathematics, 1845-54. In 1860, he was at the head of the expedition to Labrador to observe the solar eclipse of July 18. A. was author of many scientific papers, mostly astronomical, such as *Physical Phenomena attending Solar Eclipses*, *Origin of the Forms and Present Condition of some of the Clusters of Stars*, and *Harmonies in the Arrangement of the Solar System*.

ALEXANDER, WILLIAM, 1726-83; b. New York; a maj.-gen. in the revolution. He claimed the earldom of Stirling, and is generally known as lord Stirling. He was son of James Alexander, well educated and of high repute for scientific attainments. He was in England in 1755, and made an unsuccessful suit for the Stirling estates and titles; returned in 1761, and soon after married a daughter of Philip Livingston; succeeded his father as surveyor-gen., and was a member of the provincial council. He sided with the revolutionists and was made a col. in 1775, and brig.-gen. by congress in 1776. He was conspicuously brave in the battle of Long Island, where he was taken prisoner, after securing the retreat of most of his command; but he was soon exchanged, and made a maj.-gen. in Feb., 1777, and distinguished himself at Brandywine and Germantown. At Monmouth he led the left wing, and did much to secure the victory. He was commander at Albany in 1781. He was prominent in founding King's (now Columbia) college, and the Society library of New York city.

ALEXANDER, Sir WILLIAM, Earl of Stirling, 1580-1640; a poet of an eminent Scotch family. He was educated at Glasgow university; traveled on the continent; was tutor to the young earl of Argyle, and so found access to the court of James I. He wrote sonnets, the *Four Monarchicke Tragedies*, *Elegy on the Death of Prince Henry*, the *Day of the Lord's Judgment*, *An Encouragement to Colonies*, and many poems. In 1621, Sept. 21, he received the most prodigious gift ever bestowed on a subject, viz., a "gift and grant" of Canada, including Nova Scotia and Newfoundland; a singular instance of royal ignorance of geographical limits in America; still Charles I. confirmed the grant but its further history must be sought in the romance of the peerage and of the law courts. In 1626, A. was made secretary of state for Scotland, and in 1630 was created a peer as lord Alexander of Tullibody and viscount Stirling, and was made judge of the sessions in 1631. The next year he built the Argyle house, still one of the sights of Stirling. In 1633, he was made earl of Stirling and viscount of Canada, and in 1639 earl of Dovan.

ALEXANDER-ALEXANDROVITCH, b. Mar. 10 (Feb. 26, Russian date), 1845; eldest living son of the emperor Alexander II. of Russia, and heir to the throne; aid-de-camp and gen. in the suite of the emperor, gen. of cavalry and infantry, corps commander of the garde imperiel, etc. He married, Nov. 9 (Oct. 28), 1866, Marie Sophie Frederick Dagmar, daughter of Christian IX., king of Denmark. They had, July, 1879, three children—Nicholas, b. 1868, grand duke; George, b. 1871, grand duke; and Xenie, b. 1875, grand duchess.

ALEXANDER BALAS, professed son of Antiochus Epiphanes, who became king of Syria. He became hateful for debauchery, and the crown was claimed by Demetrius Nicator, whom he met in battle. A. was defeated and fled to Arabia, where he was murdered, 145 B.C.

ALEXANDER (ALEXIS, or ALEXIUS) I., COMNENUS, 1182-1222: a descendant of the great Comneni family, rulers of Constantinople. His father was killed, and his mother fled with him and his brother David to a relative, the Georgian queen of Tiflis, who raised and educated the children. On the second capture of Constantinople, 1204, A. and his brother led some disaffected Greeks to the capture of Trebizond and the neighboring Black sea coast, while David took Sinope, and threatened Constantinople. A. became ruler of all Anatolia, but was in perpetual war with the Turks and the petty

emperor of Nicæa. When he died his empire was a mere strip along the Black sea, between the Phasis and the Thermodon.

ALEXANDER JANNÆUS, third son of John Hyrcanus and first prince of the Maccabees who for any considerable period enjoyed the title of king (from 104 to 78 B.C.). He was warlike and enterprising, but was badly defeated in Galilee by Ptolemy, the son of Cleopatra of Egypt. A. then made an alliance with Cleopatra, and after some defeats captured several towns on the Mediterranean, the last being Gaza, which he reduced to utter ruin, B.C. 96. He was next called to Jerusalem to put down an insurrection, which he did after sacrificing 6000 lives, and soon after sacrificed 5000 more in a second insurrection. In still another rebellion A. was victorious, when he made a great entertainment for his friends, at which, as a part of the enjoyment, he had 800 rebels crucified in his presence, and their wives and children butchered before their eyes before they expired. Thenceforward A. became a sot, and d. from a fever caused by excessive drinking, B.C. 78, leaving two sons, Hyrcanus and Aristobulus, whose contentions down to the time of Herod the great had the effect of ruining the family.

ALEXANDER OF APHRODISIAS, lived in the 2d and 3d c., A.D.; the most celebrated of Greek commentators on Aristotle, and styled "the expositor." He was a native of Aphrodisias, and taught peripatetic philosophy at Athens. His commentaries, many of which are extant, were especially esteemed by the Arabs. He also wrote original works, of which the most important is *On Fate*, in which he argues against the Stoic doctrine of necessity; and one *On Soul*, in which he holds that the undeveloped reason in man is material and inseparable from the body. He identified the active intellect with God.

ALEXANDRA, CAROLINE MARIE CHARLOTTE LOUISE JULIE, b. Dec. 1, 1844; daughter of Christian IX., king of Denmark. She married Mar. 10, 1863, Albert Edward, prince of Wales, eldest son of Victoria, queen of England, and heir to the British throne.

ALEXANDRI, or ALEKSANDRI, VASILIO (Basil), a Rouman poet and *littérateur*, was b. at Jassy, the chief city of Moldavia, in 1821. His family was of Venetian origin. After spending several years at a French boarding-school at Jassy, he was sent, in his fourteenth year, with a tutor to Paris; and in due course he obtained from the university of Paris the degree of bachelor of letters. He is said to have thereafter made trial in succession of the study of medicine and the study of law, and to have found neither of them to his liking; he certainly followed up neither, but, without qualifying himself for any profession, went back to Jassy in 1839. He found at Jassy a band of young men educated, as he himself had been, in France, whose minds had been formed upon the literature and the political ideas of France; who, besides being ambitious of literary distinction, were zealous for political equality and for Rouman nationality and independence. He naturally became the associate of these men; and, soon after his return, made his *début* in literature by contributing a story, *The Flower-Girl of Florence*, to a periodical conducted by them under the editorship of Cogalniceano. He became a frequent contributor to this periodical. Unfortunately, it was not destined to live long, being suppressed by order of prince Stourdza. It was in 1842, after a long excursion among the mountains of his native province, that he first made his appearance as a poet, publishing several pieces, most of them strongly tinged with national feeling. At this time, too, it was that he began to write the songs and ballads upon which his chief claim to literary reputation at present rests. In 1844 he suddenly attained to an almost unbounded local popularity as a play-writer. Having become concerned in the management of two theaters at Jassy, the one French, the other Moldavian, he produced a series of pieces, some in French, others in Rouman, which, though mostly slight and hasty performances, had merit enough to excite the enthusiasm of his countrymen. *Georges de Sadagoura*, *Jassy en Carnaval*, *La Pierre de la Maison*, *La Noce Villageoise*, are the titles of the most important of them. In 1844, he had also, in conjunction with Cogalniceano and prince John Ghika, set on foot a new periodical, devoted to literature and science; but this, like the one already mentioned, was not suffered to live long—it was suppressed by the government, after a career of only nine months.

A. was engaged in the revolutionary movement which took place at Jassy in the year of revolutions, 1848, and on its failure had to betake himself to Paris. There, through the press, during the short period of his exile, he labored to arouse public opinion in favor of the independence of the Roumans; and his efforts, though they were unsuccessful at the time, helped, with those of others, to prepare the way for what took place several years after. It was to the Russian war that Moldavia and Wallachia were destined to owe their virtual emancipation from the yoke of Turkey, and the chance of obtaining self-government and union. The union of the two principalities was carried by the resolution of their inhabitants, backed by the support of France, in spite of political obstacles that seemed almost insurmountable; and A. did not a little to inspire the resolution of his countrymen. A song which he wrote at the critical moment in 1856, *The Hour of Union*, became exceedingly popular, and by its stirring appeals to the feeling of Rouman nationality, helped to allay the jealousies which divided the two principalities, and to make them work together for the union. A. took a prominent part in all the political transactions which culminated in this result. It should be stated that two years earlier,

when the death of his father had put him into possession of the family estate, he had emancipated the serfs who lived upon it; and that this example found so many imitators that the government found itself almost immediately compelled to decree a general measure of enfranchisement.

A.'s *Popular Ballads of Roumania*, which he had begun to compose in 1842, appeared at Jassy in two parts in 1852 and 1853. One of the parts, translated into French by himself, was afterwards published at Paris under the title of *Ballades et Chantes Populaires de la Roumanie*. His collected dramatic works were published at Jassy in 1852. Another volume of poems appeared at Paris in 1853; and of this volume a French translation, with the title, *Les Doinas Poesies Moldaves*, was soon afterwards produced by M. Vanesco. *Le Collier Littéraire*, a miscellaneous collection of pieces in prose and verse, many of which had previously appeared in periodicals, he published in 1857. A., as may be inferred from facts already stated, has written largely in periodicals, but mostly on subjects of passing interest. All his works, besides their intrinsic merits, which are very considerable, are interesting from the connection they have with the growth of a national feeling among the Roumans.

ALEXAN'DRIA, a co. in n.e. Virginia, on the Potomac, opposite the district of Columbia, and a part of that district until the recession in 1846; 36 sq. m.; pop. '70, 16,755—7310 colored. The surface is hilly and the soil thin. The chief productions are corn, wheat, oats, and hay. Co. seat, Alexandria.

ALEXAN'DRIA, a village and township in Jefferson co., N. Y., on the St. Lawrence river, 25 m. n.e. of Watertown. The village is a port for steamboats, and has a light-house, glass factories, and a number of churches. The Thousand Islands (numbering really more than a thousand) are a little below in the St. Lawrence, and are among the most beautiful and popular resorts in America. Many of these islands are occupied by private owners who have elegant villas and cottages, and the whole series, not long ago almost unvisited, is a grand natural and artificial park. Pop. township, '75, 3472.

ALEXAN'DROPOL, or GOOMRI, a fortified t. in the Caucasus, 85 m. s.w. of Tiflis, an important strategic point commanding the entrance to Armenia. The fort is 300 ft. above the town level, and is large and strong.

ALEXEI, ALEXANDROVITCH, 3d son of the emperor of Russia, b. Jan. 2, 1850. In 1872, he traveled through the United States, meeting a very kind reception. He is a grand duke, admiral, major-general, etc.

ALEXIS. See ALEXEI, *ante*.

AL-FARA'BI, ABU NASR MUHAMMED IBN TARKHAN, one of the earliest of Arabian philosophers, living in the 10th century. He was court physician, and a student of medicine and philosophy. He enumerates six orders of science: 1. language or grammar; 2. logic; 3. mathematics, embracing geometry, arithmetic, optics, the science of the stars, music, and weights and measures, the star science including astronomy, climates, astrology, dreams and auguries; 4. natural science; 5. civil science, including jurisprudence and rhetoric; 6. divine science, or metaphysics. This remarkably approximates the modern classification. He assumes that there must be some supreme necessary existence to account for the existences which we perceive as actual; and this supreme necessary existence has infinite life, wisdom, power, and goodness, but is an absolute unity without distinguishing attributes.

ALFHEIMR, in Norse mythology, the palace or home of Frey, the land of the elves of light or fairyland. It was presented by the gods to Frey as a "tooth gift," that is, when the young god had cut his first tooth.

ALFON'SINE, or ALPHONSINE TABLES, certain astronomical calculations made by the ablest men of the period for Alphonso of Castile (1221–84). A room in the palace at Segovia is still shown as Alphonso's observatory. The tables were compiled in 1252, the year that A. came to the throne, and first published in 1483.

ALFONSO I., of Navarre and Aragon, succeeded Pedro I. in 1104. He united Castile to his kingdom by marrying the daughter and heiress of Alphonso VI. of Leon and Castile, and thereupon assumed the title of "Emperor of all Spain." A. was surnamed "the fighter," and his victories were mainly over the Moors. In 1118 he took Saragossa after a siege of three years. In 1120, he slew 20,000 Moors on the field of Daroca. In 1123, he invaded Valencia, and two years later he went to the aid of the Christian Moors in Granada. In 1130, he crossed the Pyrenees and captured Bordeaux and Bayonne. He d. in 1134.

ALFONSO I., of CASTILE (VI. of Leon), 1030–1109; surnamed "the valiant." Leon was given to him by his father, while Sancho, the eldest son, received Castile; and Garcia, youngest of the three, was given a part of Galicia and Portugal. War soon began among them, and in 1068 Sancho defeated A. in a bloody battle on the Pisurga. Three years later A. defeated Sancho on the Carrion; but during the night Sancho was reinforced, it is said, by the renowned Cid, Roderigo Diaz de Bivar, nearly exterminated the Leonese army, took A. prisoner, compelled him to abdicate, and shut him up in a monastery. A. escaped and sought shelter with the Moorish king of Toledo. Sancho took possession of Leon and immediately went against Garcia, defeating and capturing him at

Santarem In 1073, Sancho was secretly killed, and A., upon solemnly declaring himself innocent of the murder, was reinstated in his kingdom of Leon, to which was added Castile. His brother Garcia, who was preparing to recover the throne of Galicia, was treacherously invited to A.'s court, made a prisoner, and ten years afterwards died in confinement. A. now ruled over nearly all of his father's kingdom, and went to the assistance of the Moorish king who had befriended him, and whose kingdom was invaded by the Cordovans. A.'s gratitude ended with the death of the old king: he did not scruple to attack the son, and soon captured the city of Toledo. A. was monarch of nearly the whole of Spain, when a powerful Almoravide army from Africa, with the assistance of the king of Seville, gave him a terrible defeat, in 1086, near Zalaca. He recovered after a time, but in 1108 the Moors destroyed his army and killed his only son. The next year A. died, and was succeeded by his daughter Uracca, who became the wife of Alfonso I. of Aragon. By an illegitimate daughter A. became an ancestor of the king of Portugal.

ALFONSO VI., of LEON. See **ALFONSO I., of Castile.**

ALFONSO I., of NAPLES and SICILY. See **ALFONSO V., of Aragon, ante.**

ALFONSO V., of PORTUGAL, 1432-81; surnamed "Africano," in honor of his victories over the Moors in Algiers. He succeeded his father in 1438, but did not govern until 1448, his uncle being regent in the meantime. A. declared this uncle to be a rebel, and defeated him in a battle in which he was slain. After a campaign in Africa, A. undertook to seize upon Castile and Leon, but was defeated at Toro. A. tried to get assistance from the king of France, but found that monarch deceiving him, and abdicated in favor of his son Juan. The son refused, and A. reigned two years longer, when he fell into a deep melancholy and retired to a monastery, where he died.

ALFR, elves, or fairies; in Norse mythology, beings like the dwarfs, ranking between gods and men. There were two kinds—elves of light, and elves of darkness. Their abode is Alfheimr, (fairylane), and their king the god Frey.

ALGAROVIL'LA, an astringent product of *Juga marthæ*, an acacia of New Granada; said to be four times as rich in tannin as the best oak bark. Black ink is made from it; also a yellow dye; and it is useful in medicine.

AL-GAZALI, ABU HAMED MUHAMMAD, 1058-1111; a Moslem theologian of the Ascharite sect, the head of the college at Bagdad. He visited the holy sepulchre at Jerusalem, and spent 10 years in Damascus; taught again in Bagdad 15 years, and spent his remaining life in retirement and philosophical speculation, settling finally with the Sufis, and becoming satisfied with their mystical claim to an intuition of the laws of life and of the immanent Deity.

ALGER, WILLIAM ROUNSEVILLE, b. Massachusetts, Dec. 11, 1823; a graduate of Harvard in 1857; author of a *Critical History of the Doctrine of a Future Life, Genius of Solitude, Friendships of Women*, etc. He was pastor of the church of the Messiah, Unitarian, in New York city, 1875-76.

ALGER'BA, a double star in the sign Leo, noted as a test for telescopes; one component is orange and the other green.

ALGER'IA (ante). At the close of 1877, the area of A. was 122,914 sq.m., and the pop., exclusive of wandering tribes, 2,867,626. The country is divided officially into civil territory and military territory, and there are three divisions of each:

Territories.	Sq. Miles.	Civil Pop.	Sq. Miles.	Military Pop
Algiers.....	3,180	484,771	37,269	587,936
Oran.....	5,906	416,465	27,210	236,716
Constantine.....	6,914	414,716	41,959	527,124
Total.....	16,000	1,315,952	106,478	1,551,676

The French settlers numbered 127,321, and the whole pop. of European descent was 302,576. At the end of 1877 there were 340 m. of railway open for traffic, in three lines: Algiers to Oran, 226 m.; Philippville to Constantine, 55 m.; Bona to the mines of Ain Mokra, with branches, 59 m.; and a central line was under construction in 1878 from the frontiers of Tunis to Morocco, 820 m. There were 5850 m. of telegraph, with 9869 m. of wire.

AL'GOL, a remarkable variable star in the constellation Perseus. It continues of the second magnitude for about 62 hours, then in three and a half hours it dwindles to the fourth magnitude, remains so for about 20 minutes, and in three and a half hours more gradually returns to its greatest brilliance, its variations being completed in about 69 hours.

ALGO'MA, a n.w. district of the province of Ontario, on lakes Huron and Superior; famous for mines of silver, copper, tin, iron, and for abundance of lumber. Pop. 71,4807; chief t., Sault Ste. Marie.

ALHA'ZEN, or ABU ALI AL-HASAN IBN AL-HASAN, d. 1038; a mathematician. He declared that he could construct a machine that would regulate the inundations of the Nile, but when the caliph directed him to make it he feigned madness. A. made valuable discoveries in optics, and it was he and not Ptolemy who explained why planets

appear largest when near the horizon. He also taught, in advance of Vitello, that vision does not result from the emission of rays from the eye.

ALHON'DEGA, a fortified granary near Guanajuato, Mexico, where, in 1810, in the beginning of the revolution against Spain, the commander of the city of Mexico took refuge and was captured after severe fighting by the insurgents under Hidalgo. About 2000 were slain in the city, a single family losing 17 members; and all their houses were destroyed. When the Spaniards in the granary had exhausted their stock of cannon balls, they used quicksilver flasks—some say bags of silver dollars, also—which did terrible execution.

ALLIAS, at "another time" or by "another name;" as Jones *alias* Smith: i.e., he calls himself by either name. An "A. writ" is one issued where one of the same kind has issued before in the same cause.

ALIBERT, JEAN LOUIS, 1766-1837; physician to Louis XVIII. and author of *Description of Diseases of the Skin*, and other useful works.

ALL-BEY, 1728-73; a native of the Caucasus, and a slave when a boy. He rose to be governor of the province; intrigued for more power, but voluntarily fled from Eysin to upper Egypt. In 1766, he returned to Cairo, and, seizing the government, freed himself from the power of the sultan, coined money, and assumed the rank of sultan of Egypt. Soon afterwards he captured and plundered Mecca, and undertook to conquer all Syria. At Damascus, June 6, 1771, he routed the Turks with great slaughter and took possession of the city through his general, Mohammed; but the latter turned against him and drove him from Cairo, when A. fled to Syria, defeated the Turkish army, and captured Sidon and Jaffa. On the way to Egypt he was attacked in the desert by Murad Bey, his wife's lover, and made prisoner, dying soon afterwards from wounds or poison.

ALICE MAUD MARY, Princess, 1843-78; second daughter of queen Victoria, princess of England, grand duchess of Hesse-Darmstadt. She was the best known and most beloved of all the queen's daughters, and became especially dear to the English during her father's fatal illness, when her name became "synonymous with a father's farewell and a mother's consolation." She was married to prince Ludwig of Hesse-Darmstadt, July 1, 1862. The young couple remained a year or more in England, and their eldest daughter, princess Victoria, was born in Windsor castle. Her married life was happy, and promised to be as fruitful as that of her mother, for at her death she left five daughters and two sons, but of the last two only the eldest is living, the other having been accidentally killed by falling from a window in May, 1873. The youngest girl died of diphtheria a few days before the mother, whose death was occasioned by the same disease. Princess A. was active in hospital work during the Franco-German war; was a constant visitor at the Alice hospital, in Darmstadt, and presided over the "Alice Frauenverein," an association of women for charitable purposes. She was zealous in many reform movements, and was a generous patron of literature and education. Her only son was sent to a kindergarten for education, and she positively stipulated that no distinction whatever was to be made or permitted between him and the other pupils. She died on the anniversary of the death of her father, when nearly all the British royal family were assembled at Windsor castle to observe the customary memorial services.

ALIEN (*ante*). In the United States, an A. is a person born out of the national jurisdiction of the country, who has not been made citizen according to law. Children of U. S. ministers, born abroad, are citizens; so are children born abroad whose father has been a citizen and resident of the United States; so are children of American parents born at sea on vessels under the flag. An A. is not subject to military or jury duty; nor, though naturalized, can he be president or vice-president of the United States. With regard to the two usual modes of acquiring property, by purchase, and by descent, an A. may acquire title by purchase, conveyance, or devise; and may hold, in the absence of restraining statutes, subject to an inquiry by the state; then if he be found legally an A., the land may be adjudged to the state. But such confiscation is rare, the occasions being generally met by special acts of legislature authorizing by his name "an alien to hold," etc. An A. can convey no better title than he possesses. In case of descent, no title passes and no inquest is necessary; so a citizen's brother may inherit from a brother though their father was an A. The drift of statutes, and especially of late legislation, is liberal towards aliens. In most states an intention to become a citizen puts the A. almost on the plane with a citizen. In taking, holding, and disposing of personal property there is no difference between the rights of an A. and of a citizen. But laws of congress prevent an A. from procuring copyrights. An A. enemy cannot make a legal contract with a citizen; such contract is unlawful from its inception; but an A. friend, resident or not, may sustain an action in our courts for invasions of personal or property rights. The act of 1798 authorizes the removal of the aliens of a country with which we may be at war; and, on the commencement of a war, the A. of the enemy loses his status in courts, and his property can be confiscated; but these statutes have never been enforced. There was once a custom of having a jury half of aliens when an A. was party to a suit, but that custom is disused.

ALIGARH'. See ALLYGURH, *ante*.

ALIMONY (*ante*). In the United States jurisdiction in A. is conferred in general on courts of equity. A. is of two sorts, *pendente lite*, and permanent. The object of the first is to enable a wife to carry on litigation with her husband, by securing her support during the pendency of suits. Should she have sufficient means of her own, no allowance would be made; the amount is fixed at the discretion of the court, and may be changed by the same authority. Permanent A. is a periodical allowance from a husband decreed to a wife as the result of litigation in her favor. If the result be against her, no allowance is made. The amount varies with the means or position of the husband, but is usually from a third to one half of his income, and is subject to change from time to time as the court finds circumstances to warrant. The court can prevent a husband from leaving the state if he means thereby to avoid payment; or the wife can enforce her claim in the federal courts, if the two are citizens of different states. In some states A. becomes a lien on the husband's real estate; or the court may compel him to give security for its prompt payment; or, in proper cases, the husband may be restrained by injunction from so disposing of his property as to place it beyond the reach of the court.

ALIZARINE, the coloring matter of madder. It may be obtained by subliming on paper, an alcoholic extract of madder, or by exhausting the root with water, precipitating with sulphuric acid, dissolving the precipitate in a solution of chloride of alumina, and separating the impure A. by the addition of hydrochloric acid. The impure A. is dissolved in alcohol, and separates as a lake on treating with hydrate of alumina, which is now boiled with carbonate of soda to separate another coloring matter called purpurine, and is finally treated with hydrochloric acid, which dissolves the alumina and leaves the pure substance. A. in the anhydrous state forms red prisms, and in the hydrate condition crystals like mosaic gold. It dissolves sparingly in water, even at the boiling point, but is soluble in alcohol or ether. Mineral acids do not decompose the coloring matter at ordinary temperatures. Caustic alkalies, or alkaline carbonates, dissolve A., forming deep purple solutions. A. has the atomic composition $C_{14}H_8O_4$, and has recently been made synthetically from the hydrocarbon $C_{14}H_{10}$, called anthracene, which occurs among the products of the destructive distillation of coal, and is the first example of the artificial formation of a natural coloring matter.

AL-KIN'DI, **ABU YUSUF**, lived in the first half of the 10th c., called "The Philosopher of the Arabs;" author of more than 200 works on philosophy in general, logic, politics, ethics, arithmetic (under which he discusses the unity of God), spherology, theory of music, astronomy, meteorology, geometry, cosmology, astrology, medicine, and various arts, besides controversial writings. Only those in astrology and medicine remain. He was one of the earliest translators and commentators of Aristotle, and his name marks the first philosophical revolt against Islamism.

ALKMAAR', **HEINRICH VON**, a German writer, lived in the latter half of the 15th c. He was the translator of the famous satirical historical poem, *Reineke de Voss* (Reynard the fox), which he declared that he took from the Walsch language, now supposed to be the Walloon. He was tutor of the duke of Lorraine, and little is known of his history. Some have thought A. to be a pseudonym.

ALLAMAKEE', a co. in n.e. Iowa; 667 sq.m.; pop. '80, 19,739. It is fertile and well timbered; agriculture is the chief business. Co. seat, Lansing.

ALLAMAND', **JEAN NICHOLAS SÉBASTIEN**, 1713-87; a Dutch philosopher and professor of natural history at Leyden. He did good service to science in translating Buffon's and other works, collecting plants, and investigating electricity. He was a member of the British royal society.

AL'LEGAN, a co. in w. Michigan, on lake Michigan; 840 sq.m.; pop. '70, 32,105. A navigable river, the Kalamazoo, flows through it, and several railways intersect it. The soil is fertile, lumber is produced, and brick and carriages are made. Co. seat, Allegan.

ALLEGA'NY, a co. in w.s.w. New York, on the Pennsylvania border; intersected by Genesee river and New York and Erie railroad; 1033 sq.m.; pop. '80, 42,007. Bog ore and limestone are found; cattle, wool, hay, and grain are produced; leather, lumber, flour, etc., manufactured. Co. seat, Angelica.

ALLEGA'NY, a co. in the extreme n.w. of Maryland; 800 sq.m.; pop. '70, 38,536—1166 colored. The Potomac river is on the s.; the Alleghany mountains occupy part of the co. Bituminous coal, limestone, and iron ore are found; dairy produce, lumber, leather, hydraulic cement, and fire-brick are produced. There is abundant water-power. Co. seat, Cumberland.

ALLEGHA'NY, a co. in n.w. North Carolina; 300 sq.m.; pop. '70, 3691—290 colored. It is in the Alleghany mountains, and the region is noted for copper ore. Co. seat, Gap Civil.

ALLEGHA'NY, a co. in n.w. Virginia, drained by Jackson river, one of the heads of the James; 500 sq.m.; pop. '70, 3674—579 colored. The Chesapeake and Ohio railroad, and the James river canal connect it with the seaboard. Tobacco, grain, and wool are raised. There are valuable mineral springs. Co. seat, Covington.

ALLEGHEN'Y, a co. in w.s.w. Pennsylvania; 750 sq.m.; pop. '70, 262,204. Near the middle of the co. the A. and Monongahela rivers join and form the Ohio. The surface is greatly diversified, with fine scenery; soil fertile; coal, iron, and limestone are found; cattle, wool, grain, and hay are the staples; manufactures very extensive, especially of iron. Co. seat, Pittsburgh.

ALLEGHEN'Y CITY (*ante*), one of the chief manufacturing centers of Pennsylvania, on the w. side of the A. river, opposite to Pittsburgh; pop. '80, 78,472. It is a favorite place of residence for the business men of the neighboring c., and there are some important public buildings. The western penitentiary is a very large structure in the old Norman style, completed in 1827 at a cost of \$183,000. There are usually between 400 and 500 inmates, nearly all of whom are employed in some mechanical labor. The Western Theological Seminary of the Presbyterian church was established here in 1827. Before the reunion of the "old" and the "new school" branches of the church, it was managed by the "old school." In 1878 the seminary had five professors and 183 students. The theological seminary of the United Presbyterian church, established in 1825, is also here, and at last report had four professors and 46 students. There is also the Allegheny Theological Institute, organized in 1840 by the Reformed Presbyterian church. There are about 50 churches; and among charitable institutions are the home for the friendless, the house of industry, the widows' home, and an orphan asylum. The city park comprises 100 acres, handsomely laid out: and there is a fine monument to the soldiers who fell in the civil war. The chief business of the place is manufacturing, including rolling-mills for iron, cotton-mills, foundries, machine-shops, breweries, a steel factory, a blast furnace, and extensive locomotive works. The two rivers are crossed by twelve bridges, and there is railroad communication in all directions.

ALLE'GIANCE (*ante*). It is but recently that foreign governments have come to recognize the right of persons to change their allegiance as well as their residence. The United States always held it to be a natural right, and our legislation so recognizes it. The difference was strikingly manifest in the war of 1812, when the prince regent proclaimed that every native-born Briton taken prisoner while fighting for the Americans should be shot for treason, to which president Madison replied that if any naturalized American of the United States should suffer death in such manner he would execute two British prisoners. There were no executions of the sort which England had threatened. Very recently the question has been discussed as to the right of a government to subject to military service men who were once its citizens but were afterwards citizens of another country; and late decisions tend to show that most governments are abandoning the old claim, "once a citizen always a citizen." For instance, Germans naturalized in the United States on returning to Germany were formerly required to enter the army; but now they plead American citizenship, and with success. Allegiance is often transferred *en masse*, as on the treaty of peace in 1783, when British subjects who should so elect became Americans; also, when Louisiana and Florida were purchased and Texas was annexed; no inquiry was made about allegiance, but the official transfer made the creoles and the Texans as completely citizens owing allegiance as though born under the U. S. flag. The law of congress, July, 1868, very clearly sets forth the extent and obligations of allegiance. The preamble states that the right of expatriation is natural and inherent in all people and indispensable to the enjoyment of rights to life, liberty, and the pursuit of happiness; that, recognizing this right, our government has received emigrants from all nations and given them citizenship and protection; that it is necessary for the maintenance of public peace that the claim of foreign allegiance as to such adopted citizens should be promptly and finally disavowed; and therefore it was enacted that any declaration, opinion, order, or decision of any officer of this government which denies, impairs, restricts, or questions the right of expatriation, is inconsistent with the fundamental principles of the government; that all naturalized citizens of the United States, while in foreign states, are entitled to, and shall receive from this government, the same protection of person and property that is accorded to native-born citizens in like circumstances. This broad declaration of our rights and duties was followed in May, 1870, by the British parliament in an act revising all British laws on alienage, expatriation, and naturalization—the government for the first time recognizing the right of subjects to renounce allegiance to the crown.

ALLE'GRI, GREGORIO, 1580–1652; a musical composer, b. in Rome, probably of the Coreggio family. He studied under Nanani, and was a friend of Palestrini. He composed motets and sacred pieces; was appointed to the choir of the Sistine chapel, Rome, by Urban VIII., remaining until his death. He was one of the earliest composers for stringed instruments; but his most celebrated work is the *Miserere*, still annually rendered in the Sistine chapel.

ALLEMAN'NI. See ALEMANNI, *ante*,

AL'LEINE, or ALLEIN, JOSEPH, 1633–68; an English non-conformist divine; author of *An Alarm to the Unconverted*. He was educated in Corpus Christi college, and became a tutor there. He was offered a political place, which he declined, but gladly took the office of assistant to George Newton, rector of the church of St. Mary Magdalene, Taunton. About this time he married Theodosia, daughter of Richard Alleine. He was not only constant in religious work, but deeply learned in various sciences, and

on intimate terms with the patriarchs of the royal society. When the persecution of non-conformists came, he and his senior pastor were ejected, and A. became an itinerant preacher of the gospel wherever he could find opportunity. For this he was imprisoned, but released in May, 1664; yet in spite of the conventicle act or five-mile act, he pursued his work and was again imprisoned. His later years were full of persecution and suffering. No Puritan non-conformist name is more affectionately cherished than his.

AL/LEINE, or ALLEIN, RICHARD, 1611-81; an English writer and theologian, author of *Vindicie Pictatis*; educated at Oxford; assistant in the ministry to his father, Richard A., and noted for eloquence. He declared for the Puritans, but continued for 20 years rector of Batcomb in Somerset. On the passage of the act of uniformity he went with the ejected, and, after the five-mile act, preached where he could find occasion. His *Vindication of Piety* was refused license, and Roger Norton, the king's printer, caused a large part of the first edition to be seized and sent to the royal kitchen for kindling; but, on reading it, he brought back the sheets and sold the work from his own shop, for which he had to beg pardon on his knees at the council table.

ALLEN, a co. in Indiana, on the Maumee river, and intersected by four railroads; 638 sq.m.; pop. '80, 54,555. It is level and fertile; agricultural products are the staples; machinery, flour, metal ware, and carriages are made. Co. seat, Fort Wayne.

ALLEN, a co. in s.e. Kansas; intersected by the Neosho river, and the Galveston and Leavenworth railroad; 432 sq.m.; pop. '80, 11,252. It has good timber, the soil is good for stock raising and general agriculture. Coal is found. Co. seat, Iola.

ALLEN, a co. in Kentucky, on the Tennessee river; 300 sq.m.; pop. '80, 12,330—1104 colored. The surface is level; soil moderately fertile. Limestone caverns abound. Cattle, grain, tobacco, and wool are produced. Co. seat, Scottsville.

ALLEN, a co. in w.n.w. Ohio; intersected by the Auglaize and Ottawa rivers, and the Wabash and Erie canal; 405 sq.m.; pop. '70, 23,623. It is level, well timbered, and fertile; cattle, hay, wool, lumber, and grain are produced, and wheeled vehicles are made; two railroads intersect it. Co. seat, Lima.

ALLEN, ELIZABETH AKERS, an American poet, known by her *nom de plume* of "Flor-ence Percy;" b. Me., Oct. 9, 1832. She married Paul (Benjamin) Akers, an American sculptor, and afterwards married E. M. Allen, of New York. She published a volume of poems in 1867, and has contributed largely to magazines.

ALLEN, ETHAN, 1739-89, b. Conn. He early settled in Vermont with four brothers, and became conspicuous in the contest in which both New Hampshire and New York claimed territorial jurisdiction. He was the agent of the settlers in a suit at Albany; the suit went against them and they resolved upon resistance, making A. colonel of a force which drove out the New York settlers; whereupon gov. Tryon offered £150 reward for his arrest. In this condition they were when the war of the revolution began, and one of the first points decided upon was the occupation of Ticonderoga. Allen starting at once with his Green Mountain boys, was soon joined by others, including Arnold; and on the morning of May 10, 1775, he surprised the English captain, Dela-place, in his bed, demanding surrender "in the name of the great Jehovah and the Continental congress." This stroke wrested all the northern region from the English. The Americans also took Skenesborough and Crown Point. A dispute between A. and Arnold about the command was ended by the arrival of a Connecticut regiment, with col. Hinman, who ranked both; and then A. proposed an invasion of Canada, but was not heeded. He went to Philadelphia, where congress acknowledged his services. Then he joined gen. Schuyler's army, and was employed in secret missions to Canada, rendering valuable aid in Montgomery's expedition. He was taken prisoner, Sept. 25, 1775, in an unfortunate demonstration by major Brown upon Montreal, and was sent to England. Some months later he was returned to this country and kept in the prison ships and jails in Halifax and New York until May 3, 1778, when he was exchanged. While a prisoner he was for the most part barbarously treated and kept heavily ironed. He was warmly received by Washington, and was going into the army again when he was diverted towards the old boundary troubles between New York and New Hampshire. While thus engaged an effort was made by the English through a conspicuous tory, Beverly Robinson, to seduce A. from his American loyalty, but of course without success, though he made the affair serve to preserve the neutrality of the English towards his mountaineers. A. was twice married and left a widow and seven children. He was noted as a free-thinker, or deist, and wrote *Reason the only Oracle of Man*, in which the Bible and religion are assailed with considerable vehemence.

ALLEN, IRA, 1752-1814; brother of Ethan. He served in the revolutionary army; was a member of the Vermont constitutional convention; was secretary of state; then treasurer, surveyor general, and held other offices. While in France in 1795 he bought 20,000 muskets and 24 cannon, intending to sell them to Vermont; but he was captured at sea and taken to England on charge of furnishing arms to Irish rebels. He was acquitted after a lawsuit that lasted eight years. He published *The Natural and Political History of Vermont*.

ALLEN, SAMUEL, 1635-1705; a London merchant, who bought a large tract in New Hampshire, including Portsmouth, and extending 60 m. inland, which purchase caused a lawsuit with the actual settlers that lasted until A.'s family became extinct. He acted as governor of New Hampshire until the arrival of the earl of Bellamont in 1699.

ALLEN, SOLOMON, 1751-1821; a revolutionary soldier who rose to the rank of major. He was one of the guards of Andre after his capture, and he assisted in putting down Shay's rebellion. At the age of 50 he became a clergyman.

ALLEN, STEPHEN, b. 1767; d. in the burning of the *Henry Clay* steam-boat on the Hudson river, July, 1852; a sail-maker and eminent merchant; mayor of New York in 1821. He was a strong advocate of local improvements, especially the introduction of Croton water.

ALLEN, STEPHEN, D.D., b. Me., 1810; a minister and teacher in the M. E. church; graduate of Bowdoin, 1835. He entered the ministry in 1839; and for a long period was principal of the Maine Wesleyan seminary.

ALLEN, THOMAS, 1743-1810; b. Mass., graduate of Harvard, 1762; ordained the first Congregational minister of Pittsfield, Mass., in 1764. He was twice chaplain in the revolutionary army, and was active in the battle of Bennington. He was minister of the church in Pittsfield until his death, after 46 years of service.

ALLEN, WILLIAM, 1770-1843; an English chemist, lecturer in Guy's hospital, fellow of the royal society, and one of the founders of the pharmaceutical society. With Mr. Pepys he established the proportion of carbon in carbonic acid, and showed that the diamond was pure carbon. In later life he was devoted to improving the condition of the poor by founding schools, building improved houses, and kindred labors.

ALLEN, WILLIAM, 1806-79; b. N. C. He studied law, and became partner of col. King, son of Rufus King, of New York. He settled at Chillicothe, O., and was twice elected to congress by the democrats, but was beaten in the third trial. He was elected senator from Ohio and took his seat March 4, 1837, and was re-elected six years later. In 1848, he was offered the nomination for president, but declined it on the ground that he was pledged to gen. Cass. In 1873, he was elected governor of Ohio. In the last year or two of his life he became prominent as an advocate of "soft money" or greenbacks, and was credited with originating what was inaptly styled "the Ohio idea" in national finance.

ALLEN, WILLIAM, D.D., 1784-1869; b. Mass.; a graduate of Harvard in 1802; licensed to preach in 1804. He preached in western New York, became regent and assistant librarian in Harvard college, at which time he prepared his *American Biographical and Historical Dictionary*, the first work of general biography published in the United States. The third edition has notices of nearly 7000 Americans, while the first edition has only 700. In 1810, he became his father's successor in the pulpit in Pittsfield. He was president of Dartmouth college in 1817; from 1820 to 1839, president of Bowdoin college. He spent his later life in literary work, publishing *Junius Unmasked*, *Accounts of Shipwrecks*, *Psalms and Hymns*, *Christian Sonnets*, *Poems of Nazareth and the Cross*, *Wundisoo, or the Vale of the Hoosatunnuk*, etc. He was a philologist, and contributed many thousands of words to Webster's and Worcester's dictionaries.

ALLEN, WILLIAM HENRY, 1784-1813; b. R. I. He was in the American navy as a lieutenant on the frigate *United States* in the action with the *Macedonian*, Oct. 25, 1812, in which the latter was captured. Afterwards he commanded the brig *Argus*, cruising off England in 1813, and capturing \$2,000,000 worth of property, until, Aug. 14, he encountered the British brig *Pelican*, and lost his own vessel, and died the next day of wounds received in the fight.

ALLEN, WILLIAM HENRY, LL.D., b. Me., 1808; a graduate of Bowdoin college in 1833; Latin teacher in Cazenovia, N. Y., seminary, 1833-36; professor of natural philosophy and chemistry in Dickinson college, Carlisle, Pa., 1836-46; professor of philosophy and English literature in the same, 1846-49; and acting president, 1847-48; president of Girard college, Philadelphia, 1849-62; and for one year president of Pennsylvania agricultural college. In 1867, he returned to Girard college as president. In 1872, he was chosen president of the American Bible society.

ALLERTON, ISAAC, d. 1659; one of the Plymouth pilgrims in the *Mayflower*; at first he had much influence, but he became unpopular and removed to New York, where he was for some time a merchant of note. He was married three times, once to a daughter of William Brewster.

ALLES'TREE or ALLES'TRY, RICHARD, D.D., 1619-81; an English divine; moderator in philosophy; canon of Christ's church, Oxford; doctor of divinity; chaplain in ordinary to the king, and regius professor of divinity. He served with distinction in the royalist army, undergoing much suffering and imprisonment for his devotion to the royal cause. He built a portion of Eton college and the grammar school of Christ church college. His library he bequeathed to the university.

ALL'GAIER, JOHANN, d. Prague, 1826; a German chess player and writer. He was captain in the Austrian service, and lived chiefly in Vienna. His name is preserved in the "Allgaier gambit," a chess opening which he devised.

ALL-HALLOW. See ALL SAINTS, *ante*.

ALLIANCE, a t. in Stark co., Ohio, where the Fort Wayne and Chicago and Cleveland and Pittsburgh railroads cross; pop. '80, 4633. It has many factories of horse-rakes, reapers, pumps, etc.; also rolling-mills, lead works, newspapers, a college, and libraries.

ALLIBONE, SAMUEL AUSTIN, LL.D., b. 1816; an American bibliographer, compiler of *A Critical Dictionary of English Literature, and British and American Authors, Living and Deceased, from the earliest accounts to the latter half of the Nineteenth Century*, with notices of 46,499 writers. He has written controversial essays and articles for various periodicals, including *The North American Review* and *Evangelical Quarterly Review*. In 1876, he published two volumes of English quotations, one of prose and one of verse.

ALLINGHAM, WILLIAM, an English poet, b. about 1828, in Ireland; author of *Day and Night Songs, Laurence Bloomfield*, and many excellent short poems. He has been employed in the custom service, and since 1864 has enjoyed a literary pension.

ALLIX, PIERRE, 1641-1717; a divine of the French reformed church, pastor at Charenton, near Paris. After the revocation of the edict of Nantes he went to London, where he opened a church for French exiles, in which the service was in that language but according to the English ritual. He wrote much, chiefly controversial works. His learning was great,

ALLOB'ROGES, a people of Gaul whose territory is now Savoy and Dauphin. Vienna (the modern Vienne) was their chief town. They were subjected to Rome, 121 B.C., by Fabius Maximus, and remained loyal.

ALLO'RI, ALESSANDRO, 1535-1607; a Florentine painter; trained in art by his uncle, Angelo Bronzino, whose name he sometimes assumed. A. was successful in various departments, but especially in portraits.

ALLO'RI, CRISTOFANO, 1577-1631: a Florentine painter, son of Alessandro. He studied with Pagani, and became one of the foremost of the Florentine school. His pictures are distinguished by their close adherence to nature, and for delicacy and technical perfection of execution. His finest work is "Judith and Holofernes" in the Pitti palace, the model for "Judith" having been the beautiful Mazzafirra, the artist's mistress.

ALLOUEZ, CLAUDE JEAN, 1620-90; one of the early Jesuits who visited the American lakes; trained in work in the Algonquin missions on the St. Lawrence. He founded the mission of the Holy Ghost on lake Superior in 1665, explored Green Bay, and established missions among the Illinois Indians, settling at Kaskaskia and continuing the mission begun by Marquette; but he retired in 1679 on the approach of La Salle, an enemy of the Jesuits. He died among the Miamis on St. Joseph's river. A. contributed much valuable matter to Indian history.

ALL-THE-TALENTS-MINISTRY. Lord Grenville's administration, formed after the death of William Pitt, was by its friends claimed as possessing "all the talents," and this phrase, thrown back in derision by opponents, clung to it ever afterwards as an appellation.

AL'MADEN, a t. in Santa Clara co., Cal.; pop. '70, 1647. It is noted for the quicksilver mines near by. The deposit was found at an early period by the Indians, who used the crude cinabar for paint. In 1824, the Spaniards tried to work it for silver. It was first worked for mercury in 1845. The products of two mines (New Almaden and Enriquita), for the year 1873, was nearly 45,000,000 lbs. The value of the mines was rated at \$15,000,000.

AL-MAMÛN', or AL-MAMOUN, ABÛL-ABBAS-ABDALLAH, b. 786; a renowned caliph of the Abbasides, son of Harun Al-Raschid. When Harun died, Mamun was governor of Khorassan, and his brother Amin took the Bagdad caliphate; but his treatment of Mamun led to war, and after five years of fighting Amin was slain and Mamun took his place, Oct. 4, 813. The early part of his reign was disturbed by revolts and heresies; but when affairs settled down he fostered the cultivation of literature and science in all his empire, and Bagdad became the seat of academical instruction and the center of intelligence. He had books translated from old and living languages, founded astronomical observatories, determined the inclination of the ecliptic, had a degree of the meridian measured on the plane of Shinar, and constructed astronomical tables of remarkable accuracy. He paid more respect to science than to orthodoxy, and drew his men from all countries and all creeds. This liberalism resulted in the caliph's conversion in 827 to the heterodoxy of the Motasali, who asserted the free will of man and denied the eternity of the Koran. In the latter years of his reign he was in hostilities with the Greek emperor Theophilus; revolts broke out in various parts of his empire; Spain and n.w. Africa asserted their independence, and Egypt and Syria were inclined to follow. In 833, after quelling a disturbance in Egypt, he marched into Cilicia against the Greeks, but died suddenly near Tarsus, leaving his crown to Motassem, a younger brother. Mamun was the author of *Inquiries into the Koran*, a tract on *Signs of Prophecy*, and one on *The Rhetoric of the Priests and Panegyrist of the Caliphs*.

ALMANAC (*ante*). *The American Nautical Almanac* was begun in 1849 by Charles Henry Davis, U. S. navy, and the first volume (for 1855) was published in 1853. It is believed that the first common A. in this country was for 1687, from Bradford's press

in Philadelphia. Franklin's *Poor Richard's Almanac*, begun in 1732, was kept up by him about 25 years, and was widely known in this country and abroad for its wise and witty sayings. The *American Almanac, and Repository of Useful Knowledge*, was issued in Boston from 1823-'61; a continuation, *The National Almanac*, came out for two years only, 1863-64. In 1878, A. R. Spofford, librarian of congress, began an *American Almanac and Treasury of Facts, Statistical, Financial, and Political*, a comprehensive and valuable work. Political almanacs were headed by *The Whig*, now *The Tribune Almanac*, regularly issued from 1841, and still continued. *The New York Herald, Philadelphia Ledger*, and other great journals issue almanacs. Nearly every religious denomination has its special annual, either A. or year-book; and many trades, professions, and enterprises have similar publications. Not the least noticeable are the almanacs of the patent-medicine dealers, in English, German, French, Spanish, and other languages, which are given away by millions.

AL'MEH, or ALMAI, a class of singing girls in Egypt. To enter the A. one must have a good voice, understand the language well, know the rules of verse, and be able to improvise couplets adapted to circumstances. They are in demand at all entertainments and festivals, and at funerals as hired mourners. They are distinct from the ghawazee, or dancing girls, who are of a lower order, and perform in the streets.

AL'MOKANNA, or A-MOKENNA. See MOHAMMEDAN SECTS, *ante*.

ALMONDBURY, an extensive parish and township in Yorkshire, s.e. of Huddersfield; pop. of township, '71, 11,669. There is a free grammar school, founded in 1609; and on a hill near by are the remains of a castle. A. is of great antiquity, and is supposed to have been the residence of some of the Saxon kings.

ALMON'DE, PHILIPPUS VAN, 1646-1711; a Dutch vice-admiral, serving under De Ruyter in the fights of 1666, and after the admiral's death commanding the Dutch Mediterranean fleet, gaining fame in the defeat of the French at La Hague in 1692. He was with Van Tronp in subduing the naval power of Sweden.

ALMON'TE, DON JUAN NEPOMUCINO, 1804-69; a Mexican general and diplomat, of Indian blood in part, and reputed son of Morales. He filled diplomatic positions in the United States, England, Peru, and France. He was captured while on Santa Anna's staff at the battle of San Jacinto in 1836, but was released six months later. He became Mexican minister of war, and during the war with the United States he fought under Santa Anna. At Paris he was active in promoting the French invasion of Mexico and the election of Maximilian. A. was appointed dictator of Mexico in 1862, but was distrusted by all parties, and was removed the same year. The next year he was president of a junta styled the "regency of the Mexican empire." In 1864 he was made regent and grand marshal, and in 1866 he was sent as minister to Paris, where he died.

ALM'QVIST, KARL JONAS LUDWIG, 1793-1866; a native of Sweden, remarkable in the history of literature. He quitted the university to lead a colony into the wilds of Wermeland; but the utopian colony was a failure; and he settled in Stockholm as a writer, producing several educational works and rising at a bound into fame by his novel *The Book of the Thorn-Rose*. He ran rapidly on with astonishing fecundity of brain, producing lyric, epic, and dramatic poems; philosophical, æsthetical, moral, political, and educational treatises; works on religion, lexicography, history, mathematics, and philology, all good and most of them excellent. He left one political piece after another, and was living entirely by literary efforts, when he suddenly became an extreme socialist. The public was astonished in 1851 to learn that he had been convicted of forgery and charged with murder, and had fled from Sweden. For many years he was not traced, living in the United States under an assumed name, having the fortune to be for a long time private secretary to president Lincoln. After the president's death, A. fell again into trouble; his manuscripts, including several unpublished novels, were confiscated and destroyed, and he escaped to Europe under a new alias. His strange career ended at Bremen in 1866. His romances, as a whole, are considered the best in the Swedish language.

ALMY, JOHN J., b. R. I., 1814; chief signal officer of the U. S. navy. He began as a midshipman, and rose to be commodore in 1869. He was on blockade service during the rebellion.

ALMY, WILLIAM, 1761-1836; a Quaker philanthropist, who used much of his fortune in charitable works in Providence, R. I. He endowed the New England boarding-school, and defrayed the cost of educating 80 students.

ALOÏDÆ, or ALOÏADÆ, the name of Otus and Ephialtes, legendary sons of Neptune by Iphimedeia, wife of Aloeus. They were celebrated for gigantic stature, being 27 cubits high and 9 broad when but 9 years of age. In the war with the gods they piled the mountain Pelias upon the mountain Ossa, intending to pile both upon Olympus in their effort to scale heaven. Homer says Apollo destroyed them before their beards had grown. Apollodorus says they did pile up the mountains, threatening to change sea into land. It is said they aspired to secure the goddesses for wives, one suing for the hand of Hera, the other for Artemis; but Artemis appeared to them in the form of a stag,

running between them; when both shot at the supposed animal, and each killed the other.

ALOM'PRA, ALOUNG P'HOURA, 1711-60; founder of the reigning dynasty of Burmah. At first he was a petty thief in his native village. An invasion by the king of Pegu, in 1752, gave him opportunity, and he rapidly rose to the highest distinction by boldly opposing the conquering invader, recovering Ava before the close of 1753. When the king of Burmah was slain in 1754, the son claimed the throne, but A. resisted and established his own authority. In 1755, he founded Rangoon, and two years later was known as one of the most powerful rulers of the east by his invasions and conquests of Pegu. Some insurrections followed, in one of which there was a massacre of English, but the responsibility has never been traced to A. He died when he was about to besiege the Siamese capital.

ALPE'NA, a co. in n.e. Michigan, on lake Huron, drained by Thunder Bay river; 700 sq.m.; pop. '74, 4807. It is heavily timbered; agriculture and lumbering are the main occupations. Co. seat, ALPENA, at the head of Thunder bay, 210 m. from Detroit. Pop. '70, 3964.

ALPHA AND OMEGA, the first and last letter of the Greek alphabet, employed to convey the idea of completeness or infinity; used in Rev. xxii. 13, to signify Christ in His immeasurable fullness. In early church symbolism the letters combined with a cross in a monogram represented faith in the divinity of Christ, or in Christianity in general.

ALPINE, a co. in e. California, on the Nevada border; drained by the Carson and forks of the Stanislaus and Mokelumne; 1000 sq.m.; pop. '70, 685. It is mountainous, being in the Sierra Nevada range; is rich in silver; and cattle, wool, and grain are produced. Co. seat, Silver Mountain.

ALPINE CLUB, an English society to promote mountain explorations, formed in 1858. Three members, lord Francis Douglas, Mr. Hudson, and Mr. Haddo, lost their lives while descending the Matterhorn in July, 1865. There are similar clubs in other countries, and one was organized in New York in 1873.

ALPI'NI, PROSPERO, 1553-1617, a Venetian botanist and physician. He served in the army when young, but left it to study medicine, to which he added a passion for botany. Being made physician to the Venetian consul at Cairo, A. spent three years in Egypt in his favorite study. He anticipated Linnaeus in learning the sexual differences of plants, and one of his papers gave Europe the first notice of the coffee shrub. He filled the botanical chair in the university of Padua for many years. The genus *Alpini*, order *Zingiberaceæ*, is named after him.

ALREDUS, or ALRED. See ALURED, *ante*.

ALSACE-LORRAINE (*ante*) has an area of 5580 sq.m., with a pop. in 1875 of 1,531,804, which is 227 per sq.m. It is administratively divided into three districts: Ober-Elsass, Unter-Elsass, and Lothringen. The area and population are as follows:

District.	Area. sq. m.	Pop. Dec. '71.	Pop. Dec. '75.
Ober-Elsass.....	1,353	458,873	452,642
Unter-Elsass.....	1,844	600,405	597,850
Lothringen.....	2,383	490,459	481,312
Total.....	5,580	1,549,738	1,531,804

The decrease in population for four years was 0.23 per ct. per year. In the five years preceding 1871 it was 0.84 per ct. per year, owing to war and emigration. In 1876 there were but 158 emigrants and only 108 in 1877. The census of 1871 showed 1,234,588 Roman Catholics, 271,198 Protestants, 2863 members of other Christian sects, and 40,938 Jews. About 87 per ct. are of German and 13 per ct. of French origin. The three principal cities are Strassburg, capital of Ober-Elsass, pop. 94,346; Mulhausen, capital of Unter-Elsass, pop. 58,513; and Metz, pop. 45,673. The constitution of the German empire was introduced Jan. 1, 1874. The administration is under a governor-general, bearing the title of "Oberpräsident," and under him are governors for the three districts. The estimates of receipts and expenditures for 1876 were \$10,507,507; of which \$1,538,030 was for public education and ecclesiastical matters.

ALSA'TIA, the popular name of Whitefriars, London, which served early in the 17th c. as a refuge for criminals; but this immunity was abolished by parliament in 1697.

ALSTED, JOHANN HEINRICH, 1588-1638; a German Protestant divine and voluminous writer, professor of philosophy and divinity at Weissenburg. His *Encyclopædia*, *Thesaurus Chronologicæ*, and *De Mille Annis*, are well known. The latter was a prophecy that the thousand years, or millennium, during which the saints were to reign on the earth, would commence in 1694.

ALSTON, JOHN, d. 1846; a Glasgow merchant who introduced books printed in raised letters for the blind. He published the Bible in such letters, and more than 20 volumes of other works, besides maps and charts.

AL'STRÆMER, or ALSTRÖMER, JONAS, 1685-1761; a Swedish industrial reformer. He was a clerk and a shipbroker in London, and undertook to introduce English industries in his native country, where he established a woolen factory, a sugar refinery, and improvements in farming, in shipbuilding, tanning, etc. His best success was in bringing sheep from England, Angora, and Spain. High honors were given him; he was made a noble, with permission to change his name to Alströmer, and there is a statue of him in the Stockholm exchange.

AL'STRÆMER, or ALSTRÖMER, KLAS, 1736-96; son of Jonas; a botanist, having for his master and friend, Linnæus, who named in his honor the genus *Alstrœmeria*. He visited Spain and wrote a work on the breeding of fine-wooled sheep.

ALT, or ALTEN (Ger. "old"), a prefix to many names in Europe as "alt-dorf," "old village," or "old town."

ALT-DORF. See ALTORF, *ante*.

ALTENES'SEN, a t. in Prussia, in the Rhine province; pop. '71, 10,099.

ALTENSTEIN, a castle near Eisenach, Saxe Meiningen, on the s. slope of the Thuringer wald, the summer residence of the governing dukes. It has a fine park in which is a cavern 500 ft. long through which flows a large stream. Boniface lived and preached here in 724; and near by is the place where, in 1521, Luther was seized to be carried off to Wartburg.

ALTENSTEIN, KARL VON, BARON, 1770-1840; a Russian statesman. After the treaty of Tilsit he became the head of the finance department; in 1815, he went to Paris with Humboldt to claim the restoration of works of art taken from Prussia by the French armies; afterwards he was minister of public worship and education, doing great service for the universities and schools. Under his direction the university of Bonn was founded. He was one of Fichte's warm supporters.

ALTER'NATE GENERATION, a method of reproduction in certain of the lower orders of animal life, in which the young resemble not the parent but the grandparent or some more remote ancestor, the successive generations passing through a regularly recurring series. The radiated creatures, popularly called jelly-fishes, illustrate A. G. In pools left at low tide on the sea-shore, a hydroid is found growing in tufts like shrubs, each individual pendent from the general mass by a slender tube, as a flower from its stem, each mouth taking food for the common nourishment. The young of this creature are jelly-fishes, small, transparent cups, from which depend four long threads and a proboscis, each specimen an independent unit moving freely in the water. This creature produces bunches of spheres from which come other jelly-fishes, and also spheres or eggs from which are developed pear-shaped bodies, that take a permanent abode and have the form of the first hydroid. The fixed hydroids and swimming jelly-fishes are alternate forms assumed by the successive generations of the same animal.

ALTHEN, EHAN, or JEAN, 1711-74; b. in Persia, and a slave to a planter, from whom he escaped and went to Avignon, where he established the cultivation of madder. Like many others who have conferred great benefits on the public, he died in extreme poverty. The public authorities were setting up a monument to A. at Avignon while his only daughter was dying in a charity institution.

ALTHORP, LORD. See SPENCER, *ante*.

ALTIN', a lake in Siberia, which is one of the sources of the Obi, in the Altai mountains, 320 m. s. of Temsk; 80 m. long by 50 wide. This lake is remarkable because in winter the northern part is frozen so as to bear sledges while the southern part has never been known to freeze.

ALT'KIRCH', a t. in upper Alsace, 70 m. s. of Strasburg; pop. about 3200; selected by Germany to be fortified as a counterpoise to Belfort in France. A. was founded in the 12th c., and has the ruins of a castle which was often occupied by Austrian archdukes in their visits to Alsace.

ALTURAS, a co. in s. Idaho, on Snake river; pop. '70, 689. The Rocky mountains are in the n. part. Mining is the principal business.

ALUM'NUS, originally indicating a student supported and educated at the expense of the "Alumnat," an institution endowed for educating youths who could not pay for living and tuition. Three such, founded by Maurice of Saxony, are still in active operation. But in modern usage every graduate of a college is an A. In law, *alumnat* is a term for the general responsibility in the eyes of the law attached to the relationship of foster father towards the child whom he has undertaken to support and educate.

ALUTA, or ALT, or OLT, a branch of the Danube rising in e. Transylvania, crossing the Carpathians, traversing Wallachia, and emptying opposite Nicopolis; about 330 m. long.

ALVAREZ, FRANCISCO, 1460-1540; a jurist, and almoner to king of Portugal; sent in 1515 as secretary to an embassy to the king of Abyssinia. In 1533, he went to Rome on an embassy to Clement VII. A. published an account of his travels, curious but not trustworthy, as, like most travelers of his time, he was extremely credulous.

ALVAREZ, JUAN, 1790-1863; a Mexican general and statesman. He led the revolt which deposed Santa Anna in 1855, and became president in his place, but resigned the next year. He was one of the most determined opponents of Maximilian and the French invasion.

ALVINCZY, or ALVINZY, JOSEPH, Baron von, 1735-1810; an Austrian field-marshal, distinguished in the seven years' war at Torgau and Toplitz. He took part in the campaign against the Turks in 1789, but did not take Belgrade. Though oftener losing than winning, he was selected to lead the Austrian army against Bonaparte; but having lost the important battles of Arcola and Rivoli, he was recalled. In 1798, he was made superior commander of Hungary, and reorganized the army. In 1808, A. was made field-marshal.

ALVIS ("all-wise"); in Norse mythology, the dwarf who answers Thor's questions in the lay (song) of Alvis.

ALZEY, or ALZEI, an old city in Rhenish Hesse, on the Selz, 18 m. s.w. of Mentz; pop. '67, 5358; tanning and tobacco manufacturing are the chief industries. The t. was founded in Roman days, and had its own lords in the middle ages, the ruins of whose castles are still visible.

ALZOG, JOHANN BAPTIST, 1808-78; a Roman Catholic theologian. He was professor of church history in the university of Freiburg, and wrote a *Hand Book*, which is known in many languages. He was also the author of an *Outline of Patrology*, and in 1869 was a member of the commission on dogma which prepared the work for the vatican council. He was the only member of the commission who opposed the promulgation of the dogma of papal infallibility.

AMADEUS I., AMADEO FERDINANDO MARIA, b. May 30, 1845; duke of Aosta, king of Spain, second son of Victor Emanuel, king of Italy. He was rear-admiral in the Italian navy, and lieut.-gen. in the army. He married, May 30, 1867, princess Marie del Pozzio della Cisterna, daughter of the countess de Merode. They have three children, Emanuel, Victor, and Louis. On the 4th Dec., 1870, A. accepted the crown of Spain, with the sanction of his father and the approval of the great powers. He reached Madrid Jan. 2, 1871, four days after the assassination of gen. Prim. He himself was assailed by assassins in July, 1872, and also troubled with Carlist risings. On the 11th Feb., 1873, he abdicated for himself and heirs, and returned to Italy, the Spanish cortes proclaiming the republic and making Figueras the first president.

AMADOR, a co. in c. California, drained by the branches of the San Joaquin; pop. '70, 9582. Gold, copper, and marble abound; grain, wool, and wine are the chief products. Co. seat, Jackson.

AMALARIC, 501-531; the last Visigoth king of Spain. He married Clotilda, daughter of Clovis, king of the Franks, in 527, and treated her so badly because she would not embrace Arianism that her brother Childebert came against him, and defeated him, A. being killed while in flight.

AMALIE, MARIE FRIEDERIKE, b. Dec. 21, 1818; queen of Greece; daughter of grand duke Paul and half-sister of grand duke Nicholas, of Oldenburg. She married king Otho of Greece, Nov. 22, 1836, and is much beloved for firmness, benevolence, and many other virtues. During the foreign occupation of Athens, in 1856, she acted as regent. In 1861 a Greek student shot at but failed to kill her. After her husband's deposition in 1862 she accompanied him to Bavaria, residing since his death at Bamberg.

AMALIE, MARIE FRIEDERIKE AUGUSTE, 1694-1870; a German duchess and dramatist, eldest sister of king John of Saxony. Many of her dramas have been adapted to the French and English stage. They are noted for love of virtue and cheerful humanity. She also wrote operas and sacred music.

AMALRIC, ALMAURIC, or AMAURI OF BENA, founder of a school of Pantheists known by his name. He lectured in Paris about 1200 or 1204. His doctrines were condemned by the university; the pope confirmed the condemnation, and ordered A. to return to Paris and recant, which he did in 1207. He died two years later, and in the same year two of his followers were burnt before the gates of Paris; his own body was also dug up, burned, and the ashes thrown to the winds. His doctrines were formally condemned by the fourth Lateran council in 1215.

AMALS, or AMALI, a royal family of the Goths, furnishing all their sovereigns until the separation into Ostro and Visigoths, after which the Ostro kings were A. until the end of the male line in Theodoric the great. The name A. is thought to have meant "spotless."

AMALTHÆA, the nurse of the infant Jupiter, supposed to have been a goat; with her two young metamorphosed into stars. It is said that Jupiter broke off one of her horns which he endowed with power to fill with whatever the holder wished, and this was the "cornucopia," or horn of plenty.

AMASIS, first Pharaoh of the 18th Egyptian dynasty. He reigned 1525-1499 B.C. He led the insurrection against the shepherd kings, captured their stronghold of Avaris,

and drove them into Palestine. He then began a long series of Egypto-Asiatic wars which carried the arms of his successors beyond the Euphrates.

AMAT' DI SAN FILIPPO E SORZO, LUIGI, 1796-1878; cardinal bishop of Ostia and Velletri, dean of the sacred college, and vice-chancellor of the Roman Catholic church. He was educated in the ecclesiastical academy of noblemen, and at the age of 23 was appointed prelate. April 29, 1827, he was made archbishop of Nicea *in partibus*, and sent as nuncio to Naples; afterwards as nuncio to Spain. In 1837, he was made cardinal, and the next year sent as legate to Ravenna, where he became the intimate friend of cardinal Mastai-Feretti (subsequently Pius IX.). Pius intrusted A. with the Bologna legation, but he was sent away by the revolution, joining Pius at Gaeta, and in 1852 received the two most lucrative positions in the papal court, vice-chancellor, and archivist of the apostolic letters, retaining both until his death, and from time to time acquiring other offices.

AMATI, 1550-1684; a family of violin makers at Cremona. Andrea and Nicolo A. are said to have been brothers, and the men who first made violins. The instruments made by the family are of small size, exquisite finish, and exact mathematical proportions of parts; their tone is soft and sweet, but lacking in intensity because the violins are so flat. Stradivarius was one of their pupils.

AMAU'RY, or AMALRIC I., 1135-73; count of Joppa. He was made king of Jerusalem in 1162 on the death of Baldwin, his brother. A. was a vain, ambitious, and imprudent ruler, and, warring upon Egypt, was defeated and driven out by Saladin, who continued his Saracenic conquests over Baldwin IV., son and successor of A.

AMAU'RY, or AMALRIC II. of Lusignan, king of Cyprus and nominally of Jerusalem, 1194-1205. He called the crusaders to help him against the Saracens, but they stopped at Constantinople to assist in cutting up the Byzantine empire. He left Cyprus to his son, Hugo de Lusignan.

AMAZI'AH, ninth king of Judah, son and successor of Joash. He reigned 29 years, 837-808 B.C. In general his reign was good; the principal event was an attempt to reimpose upon the Edomites the yoke of Judah which they had thrown off in Jehoram's days, and for this purpose A. hired an auxiliary force from Israel of 100,000 men for as many talents of silver—the first mention of a hired or mercenary army among the Jews; but a prophet told him to send back the hired soldiers, which he did, not only losing their services and his money, but exasperating the Israelites, who took the act as an insult, and plundered the towns and people of Judah on their homeward march. But A. was victorious over the Edomites, taking the city of Petra, and slaying 20,000 men. It was, however, a fatal victory; for A., finding some idols of Edom among his plunder, worshiped them; and, elated with his success, undertook to subdue the ten tribes of Israel, but was defeated by their king Joash, and carried a prisoner to his own capital, Jerusalem. Joash satisfied himself by breaking down much of the walls of Jerusalem and plundering the city and temple, leaving A. on the throne after taking hostages for his good conduct. A. died fifteen years later at the hands of conspirators.

AMAZO'NAS, a northern department of Peru; 14,129 sq.m.; pop. '76, 34,245 white and about 60,000 wandering Indians. It is bisected by the Andes, and watered by the Marañon (Amazon) and branches. The soil is very fertile, producing wheat, corn, rice, sugar cane, tobacco, coffee, cocoa, cotton, indigo, cinchona, and sarsaparilla in great profusion. In the forests are mahogany, cedar, and other valuable woods. Capital, Chachapoyas.

AMAZO'NAS, or ALTO AMAZONAS, the northernmost province of Brazil; 753,439 sq.m.; pop. '72, 57,610. The limits are not well defined, and the surface is little known, being mostly covered with original forests. The inhabitants are nearly all Indians. Capital, Barra do Rio Negro.

AMBÁLÁ, a city in India, capital of the district of A., 30° 24' n., 76° 49' e.; an important station on the Scinde, Punjab, and Delhi railway. It is a large walled town in a level and well cultivated country. The pop. is 50,662, including the English military station near by; pop. of the city, 24,040; of the district, '68, 1,035,488.

AMBI'ORIX, a Belgo-Gallic chief who fought against Julius Cæsar in the 1st c. B.C. By cunning and strategy he defeated one important Roman garrison, and massacred every man; but while on the march to another camp he encountered Cæsar himself, who easily defeated him, though A. with a few men escaped into the forests.

AMBLETEUSE, pop. about 700; a French seaport on the English channel, 5 m. n. of Boulogne, where James II. landed on his flight from England in 1689. The place is no longer prosperous. When Napoleon meditated the invasion of England in 1804, he undertook without success to improve the harbor. Near A. stands the granite column erected by Napoleon to the grand army of 1805.

AMBLYOP'SIS, a genus of blind fishes of which one species is found in the Mammoth cave, Kentucky. Eyes exist, but they are in a rudimentary state and under the epidermis. The A. is small, the largest no more than 5 in. long; body white and partly covered with scales; easily taken by a net or by the hand if perfect silence is observed,

but they have most acute hearing. They feed on crayfish and other fishes. The nearest kindred are the minnow, pickerel, and herring.

AMBOY, a t. in Lee co., Ill., on the Illinois Central, and the Rock Falls branch of the Chicago, Burlington and Quincy railroads, 94 m. w. of Chicago. It has manufactures and local trade. Pop. '80, 3000.

AMBRA'CIA, or AMPRACIA, a city of ancient Epirus, on the e. bank of the river Arachthus, 7 m. from the Ambracian gulf. About 635 B.C. it was colonized by Corinthians, and became a Greek city. Its power increased until, in the time of the Peloponnesian war, it commanded the whole of Amphiloehia, including the city of Argos. In 432 B.C. the expelled Argosians drove out the Ambracians and retook their city. The Ambracians made two unsuccessful efforts to recapture Argos, but their power was declining, and in 338 the old city submitted to Philip of Macedon. About 295 B.C. Ambracia was ceded to Pyrrhus of Epirus, who made it his capital and enriched it with works of art. At a later period it came under the power of the Ætolian league, and in the year 189 B.C. it sustained a siege in the war between the Ætolians and the Romans, the latter entering the place and carrying many of the treasures of art to Rome. In 31 B.C. Augustus removed the people of A. to Nicopolis, the town which he founded in honor of his victory at Actium. The site of A. is now occupied by the town of Arta, near which ruins of the old city can be seen.

AM'BRIZ, part of the Portuguese Angola, Africa; 89,300 sq.m.; pop. 2,100,000. The chief t. is A. at the mouth of Loge river, in 7° 52' s. The Portuguese annexed the t. in 1855. In 1865 it had 16 trading stations, of which 2 were American.

AMELIA, a co. in central Virginia on the Danville railroad, almost surrounded by the Appomattox river; 300 sq.m.; pop. '70, 9878—6823 colored. It is intersected by the Richmond and Danville railroad; the productions are wheat, corn, oats, and tobacco. Co. seat, Amelia Court House.

AMELOT DE LA HOUSSAYE, ABRAHAM NICOLAS, 1634-1703; a French historian; a prisoner in the bastille by order of Louis XIV. He published *History of the Government of Venice*, translations of Macchiavelli's *Prince*, and Tacitus's *Annals*, and of Sarpi's *History of the Council of Trent*, the notes of which, written by A., gave great offense to the advocates of the unlimited authority of the pope. Voltaire speaks of his histories as very good, and of his memoirs as very faulty.

AMELOTTE, DENIS, 1606-78; a French ecclesiastic and writer; member of the congregation of the orators of St. Philip Neri. He is remembered for his quarrels with the Port Royalists, and his fierce denunciation of the Jansenists. A. published a translation of the New Testament in 1666-68.

AMENDMENT (*ante*). An A. to the constitution of the United States may be proposed by the affirmative vote of two thirds of each house of congress, and then it must be submitted to the states, when, if three fourths of all the states by vote in the legislature (or in state convention if required by congress) ratify such amendment, it becomes a part of the constitution. Or, on the application of the legislatures of two-thirds of the several states, congress shall call a convention for proposing amendments; but this mode has never been resorted to. There is one restriction only on the nature of amendments, which is "that no state without its consent shall be deprived of its equal suffrage in the senate."

AMENO'PHIS, AM'UNOPH, or AMEN-HOTEP, the name of three Egyptian kings of the 18th dynasty. A. I. was the second of them. He continued the conquests begun by his predecessor in Canaan, and made an expedition towards Ethiopia to extend the boundary of his kingdom. He reigned 21 years, 1499-78 B.C.

AMENO'PHIS II., King of Egypt, son and successor of Thotmes III., and father of Thotmes IV.; identified by some writers with Memnon, who fought against the Greeks at Troy.

AMENO'PHIS III., King of Egypt, son of Thotmes IV. He reigned 36 years, 1400-1364 B.C., and made Egypt prosperous and contented, extending the kingdom over more territory than ever before or afterwards, as it reached from the w. bank of the Euphrates into Ethiopia. There are many monuments of his period, the most famous being the two colossi, one of which is known as "the vocal Memnon." Some writers supposed this to be the king whom the Greeks called Memnon. His exploits in war are commemorated on the obelisk which, transported from Egypt, now stands in the Place de la Concorde, in Paris.

AM'ERBACH, JOHANN, d. about 1520; a German printer, educated in Paris. He established a press at Basel, publishing the works of St. Ambrose and St. Augustine, and began to publish those of Jerome. He was one of the first to use Roman in place of Gothic letters. His son Boniface was an intimate friend of Erasmus.

AMERICAN ALOE. See AGAVE, *ante*.

AMERICAN ECLECTIC, or NEW SCHOOL OF MEDICINE, began to be known about 1825 as distinct from the "regulars," and in 1826 there was an eclectic college founded in New York by Wooster Beach, who was the author of several text-books for

the school. Soon afterwards schools were established in Ohio and other states, and at a later period regular colleges in New York, Chicago and other cities. State societies were formed, and in 1870, The National Eclectic Medical Association was incorporated by the New York legislature. It has grown in influence, and now represents probably 13,000 to 15,000 physicians in all the states. The school flourishes also in the British provinces, and there is an eclectic association in England. The prominent feature of the school is the rejection of mercury and most other minerals in medicine, and the extension of simple hygienic treatment in disease, depending more upon the vital powers than upon extraneous aid. In place of minerals rejected they have added a hundred or more to the list of vegetable medicines.

AMERICAN FLAG. On the 14th of June, 1777, the continental congress resolved that the flag of the united colonies should show 13 stripes of red and white alternating, to represent the number of the colonies, with 13 stars in a blue field. This became the flag of the United States, and a star is added for every state added to the union. At present (1880) there are 38 stars. The width of the flag should be two thirds its length. Seven of the stripes, beginning with the outermost, are red. The blue field or union is square, and has the width of seven stripes. The U. S. revenue flag has 16 vertical stripes, alternately red and white, with a white union bearing the national arms in dark blue.

AMERICANISMS (*ante*). This term can no longer be used as a reproach. It must be taken as indicative merely of the usage of the English language in a new English-speaking nation, with no reference to the question as to the propriety and worthiness of the new usage. While many A. hear the stamp of vulgarity, some spring from an undeniable necessity, and still others graft on the old stock a welcome grace and strength. Not all A. are strictly American; some are early English usages retained, or revived after the parent country had dropped them. It is now conceded that by the refined classes of people in some regions of the United States the English tongue is used in a purity and propriety not excelled in any portion of Great Britain.

The following are some of the more widely known A.: *Approbate*, for approve; "I approbate," etc. *Bad*, in the sense of ill. *Baggage*, for luggage. *Balance*, for remainder. *Boards*, for "deals;" in England "boards" has an application more general. *Bogus*, bad or counterfeit. *Border*, a strip of greensward along a wall or path; in England called "edging." *Boss*, from Dutch "baas," superintendent of labor; used by boys especially to all men not known or called by name. *Buggy*, a four-wheeled vehicle; in England, two-wheeled. *Buncombe*, empty or unnoticed talk; long ago a member of congress from a North Carolina county of that name was rallied for making set speeches to nearly empty chairs, when he replied that he did not care for hearers—he was "talking for Buncombe," i. e., for effect on his personal constituents. *Bureau*, a chest of drawers. *Calculate*, for think; "I calculate I can do it." *Calico*, in the United States, printed cotton; in England, unprinted. *Caption*, heading or title. *Clever*, good-natured. *Conclude*, in the sense of determine; "I conclude I will go." *In this connection*, for "in connection with this subject." *Corn*, maize only; in England, grain in general. *Creek*, a stream more than a brook and less than a river; in England, a small arm of the sea. *Creole*, properly people of European blood born in Spanish American territory; but used to mean natives of the south, especially of Louisiana, tinged with negro blood. *Deadhead*, one who travels on passes, etc.; any one who does not pay; the verb "to deadhead" is sometimes used. *Dry Goods*, all sorts of haberdasher's wares. *Dress*, for gown. *Elect*, for choose; "he elected to take the land." *Endorse*, for sanction or approve. *Eventuate*, for result. *Expect*, for know or believe, as "I expect it was too late." *Fall*, autumn. *Fancy*, new, peculiar, desirable, or showy, as "fancy silks," "fancy note paper," "fancy horses;" applied to stocks it means those not in regular standing on the exchange; also it indicates an assortment of light wares, as "fancy stores." *Fleshy*, stout. *Freshet*, a sudden rise of water. *Gerrymander*, an arrangement of the bounds of electoral districts to favor party success; from Elbridge Gerry, who first practised the trick while governor of Massachusetts. *Hack*, a hackney coach; in England, a horse for casual hire. *Hold on*, stop; probably from German "Halt an." *Homely*, plain-featured; in English, home-like or unadorned. *Improve*, to clear wild land and establish farms. *Improvements*, buildings usually, but any addition which one has made to his place or property. *Lend*, as a verb for lend. *Lobby*, verb, to influence legislation, generally in an improper way. *Locate*, to settle upon, or to select a place. *Mad*, for angry. *Mail*, for post; we "mail" a letter, the Englishman "posts" it. *Notify*, to give notice to; in England, "to make known." *Obnoxious*, offensive. *On*, for in; we say "he lives on Tenth street," the English say "he lives in." *Pants* (vulgarism) or *pantaloon*s, for trousers. *Pipelaying*, procuring fraudulent voters; when the Croton water was introduced into New York hundreds of men were brought from Philadelphia just before an election, ostensibly to lay water-pipes, but really to vote where they had no legal right to vote. *Pond*, a natural, in England an artificial, pool. *Railroad*, in England, "railway;" and *locomotive* for the English "engine." *Rapids*, river currents broken by shallows. *Reckon*, for "suppose" or "think;" as "I reckon that will do." *Reliable*, for trustworthy. *Ride*, either on a horse or in a vehicle; in England, restricted to horseback. *Rile* (English provincial roil), to stir up, to make angry. *Rooster*, cock, or male barnyard fowl. *Sick*, for any illness; the English usually restrict it to illness of stomach. *Skedaddle*, to run away. *Sleigh*, any

sledge or vehicle on runners. *Spin*, a pair. *Stage*, a stage-coach. *Stoop*, Dutch for the entrance to a house. *Store*, for a place where things are sold; the English generally say "shop." *Suspenders*, braces. *Suspicion*, occasionally used as a verb, to suspect. *Switch*, to change cars to another track; English "shunt." *Tavern*, where travelers are lodged; in England, where liquor is sold but travelers are not entertained. *Ticket*, we buy "way-tickets" or "through-tickets" on railroads, etc.; the Englishman is "booked." *Timber*, forest or grove. *Transient person*, one not remaining long in the place. *Venison*, the flesh of the deer; in England, wild meat in general. *Wagon*, or *wagon* as a verb, "the goods were wagoned over." *Will*, for "shall," to express an expectation. *Woods*, English a wood.

The following are some of the phrases common in the United States, of which many are acknowledged as "slang" and not in use by careful speakers. *Acknowledge the corn*, to admit or confess a thing. *All-fired*, great, excessive. *All-possessed*, acting as though possessed by an evil spirit. *Allow*, to concede. *Among the missing*, disappeared, run away. *Any how you can fix it*, meaning it is so and cannot be otherwise. *Appreciate*, to increase in value. *As good as*, for "as well as;" "I might as good as give up." *Backbone*, courage, moral or political. *Buck down*, or *out*, or *take the back track*, or *back seat*; to submit to defeat. *Barking up the wrong tree*, operating in the wrong direction. *Beat*, to excel; "it beats all creation." *Blow*, gasconade. *Blower*, a braggart. *Blow out*, usually a festive entertainment. *Bogus*, counterfeit, bad, untrue. *Buck*, a male Indian or negro. *Brick in his hat*, tipsy. *Bust, busted*; failed, out of money. *On a bust*, getting drunk. *Caboodle*, the whole company or array. *Cahoot*, to go in partnership. *Can't come it*, you cannot deceive me. *Caps all*, or *caps the climax*, surpasses everything. *Carryings on*, wild or extravagant actions. *Cave in*, for yield, or fail. *Chalk*, the right thing; "that's the chalk;" "you can't fool me, by a long chalk." *Chisel*, to cheat. *Choke off*, to stop one's operations. *Come around, come over*, to coax or to wheedle; "you can't come it over me." *Considerable*, in a great degree; "that's considerable of a yarn." *Coon*, a smart or cunning fellow; "he's a coon." *Corner*, to get advantage of; "I cornered him." *Crowd*, any number of persons in a place or party; "he goes with the crowd." *Cut up, cut up didoes*, or *shindies*, frolicsome or mischievous acts. *Cut stick, cut dirt, cut your lucky*, to run away. *Cut a swath*, or *a swell*, or *a big figure*, to appear or act extravagantly. *Cut it too fat*, overdid it. *Death on a thing*, for superior in it; "he's death on billiards." *Desperate*, very; "I'm desperate glad you came." *Diggings*, for region; "in the diggings," here, or hereabouts. *Do, or Du, tell*, interrogations of surprise. *Done*, for did; "John done it." *Down upon*, opposed to; "I'm down on that like a thousand of brick." *Dreadful*, very or really; "he's dreadful good." *Driving*, for following a purpose; "what's he drivin' at?" *East*, for right; "that's about east." *Eating*, for to be eaten; "them's good eatin' apples." *Everlasting*, great, superior; "this is an everlasting big country." *Eye skinned*, watchful, cautious. *Face the music*, to meet the emergency. *Fair shake, fair show*, fair dealing, a fair chance. *Female*, misused for woman. *Fence, on the fence*, one undecided which party or side of a question to take. *Few*, somewhat; "I was scared a few." *Fire away*, go on. *Fix his flint*, to prevent one from doing a thing. *Fizzle*, a wretched failure. *Flash in the pan*, a failure. *Flat broke*, out of money. *Flat-footed*, extreme or unmistakable. *Fly off the handle*, to get excited. *Forehanded*, having money laid aside. *Fork over*, to pay up. *Freeze to*, ardently desiring, accepting, seizing. *Full chisel*, with all speed or force. *Funeral*, for concern; "it's none of our funeral." *Got his back up*, became angry. *Got the wrong pig by the ear, or tail*, accusing the wrong person. *Go-aheadatireness*, force, enterprise, efficiency. *Go for him*, to attack vigorously. *Goes with a looseness, with a rush, goes his pile, or his death, goes the whole hog on it*, working zealously for a purpose. *Gone under, gone coon, gone goose*, failed or dead. *Goose, sound on the goose*, to be depended upon, usually in a party sense. *Grass widow*, one separated from a husband who still lives. *Green*, unsophisticated; "he's a green horn;" "as green as grass." *Grit*, courage or endurance. *Gum game*, trick, deception. *Gumption*, common sense. *Gush*, voluble talk; *gusher*, one who is profuse or ardent in words. *Hang of*, mastery of, understanding of; "he's got the hang of it." *Hang up the fiddle*, to go out of the business in hand. *Hard up*, out of money. *Heap*, a great amount; "there's a heap of folks at the meeting." *Heft*, weight. *High falutin*, ornate, bombastic. *Hitch horses*, to join in partnership. *Honeyfugle*, to cajole or deceive. *Hook*, to steal. *Hookay*, applied to unauthorized absence from school. *Hook, on his own*, by himself. *Hooter*, probably a mispronunciation of "iota;" "I don't care a hooter." *Horn, in a*, "I believe it, in a horn;" i.e., I don't believe it at all; the same as *over the left*. *Hoss*, a senseless vulgarism of personal address; "how are you, old hoss?" or "old hoss fly." *Hunk*, a large piece; "all hunky," all right; also "hunky dory." *Hurry up the cakes*, be quick. *Jam up*, complete. *Jesse, give him*, to thrash or overcome him. *Jig is up*, the affair or attempt is ended. *Jug full, not by a*, an expression of contemptuous doubt. *Keep the pot boiling*, keep at your business. *Keep company*, applied to "courting." *Kick up a row*, to raise a disturbance. *To kill*, extremely; "that cat runs to kill," or very fast. *Kind o', kind er*, as it were. *Kink*, a notion; "I've got a kink in my head." *Knocked into a cocked hat*, used up. *Knock down*, a rebuff; "that was a knock down for him." *Larrup*, flog. *Law sakes a'ive!* exclamation by old women, like "mercy sakes alive!" *Lay*, purpose or design; "what lay are you on now?" *Let on*, tell or disclose. *Let up*, release. *Lickety-*

split, with all speed. *Lift*, or *raise*, his hair, scalp. *Like I do*, for "as I do." *Like a book*, right, regular, correct. *Little end of the horn*, to come out at the, to fail after a promising start. *Logrolling*; at first, the reciprocal aid of neighbors in gathering and piling logs; now, combinations of legislators and outsiders to procure the passage or defeat of laws. *Loggy*, heavy, stupid. *Looseness*, recklessness; "he goes it with a perfect looseness." *Love*, for like; "I love apple pie." *Make his mark*, succeed. *Make tracks*, run away. *Make a raise*, get money. *Middling well*, in moderately good health. *Mill*, "he has been through the mill," i.e., has had experience. *Mind your eye*, keep good watch. *Mind the baby*, take care of the child. *Missing*, among the, a runaway, particularly a debtor. *Monstrous*, for "very;" "she's monstrous pretty." *Mortal*, very; "its mortal hot." *Mosey*, run away. *Most* is used where "almost" should be. *Mourners*, crowding the, pressing hard upon the weak or unresisting. *Nary red* (not any red), not a cent. *Nip-and-tuck*, neck and neck; an even race. *No* (doubled); double negatives are common in ordinary conversation; as "that won't do, no how." *No sir-ree!* an emphatic negative. *Nothing else*, an emphatic affirmative; "will you wear your new bonnet to church?" "Well, I ain't goin' to wear nothin' else." *Off*, for from; "he's borrowed a quarter off me." *Off the handle*, or *track*; gone wrong. *One of 'em*, for a person well informed, active and self-possessed; same meaning as "he will do," "he can travel," "he'll pass." *On hand*, always ready. *Opinionated*, fixed in his sentiments, with a will of his own. *Overhaul*, to defeat, usually in political action, and by crooked means. *Partly*, nearly; "his house was partly opposite mine." *Pesky*, very, extreme or troublesome. *Plaguy sight*, considerable. *Poky*, dull, stupid. *Powerful*, very; "she's powerful weak." *Predicate*, found upon. *Pretty considerable*, a large quantity. *Prospect*, look for land, or mines. *Proud*, glad; "I'm proud to see you." *Pull foot*, or *heel*; run off. *Pull up stakes*, move to another place. *Pull the wool over his eyes*, deceive a man. *Rag off the bush*, to take the, to excel. *Reckon*, think; "I reckon he will come." *Pull through*, succeed. *Rendition*, rendering. *Right away*, soon. *Rip out*, speak violently. *Rip-tearing mad*, very angry. *Rip-snorter*, thorough going. *Risky*, doubtful or dangerous. *Roorback*, a false political report. *Rouser*, superior; "he's a rouser." *Row up*, scold; "the old woman will give you a rowing up." *Row to hoe*, the work in hand. *Rub out*, deny; "there's no use of trying to rub it out." *Scallawag*, a good-for-nothing. *Secure up*, find. *Scout*, run around or away. *Serape*, difficulty; "I'm in a serape." *Screamer*, superior; "that gal's a screamer." *Serew*, severe opposition; "I'll put the screws to him." *Scrumptious*, fine, excellent. *Semi-occasionally*, once in a while. *Sense*, understand; "do you sense it?" *Shake*, in a brief period; "I'll be there in a brace of shakes." *Shake a stick at*, enumerate or estimate; "there are more clams than you can shake a stick at." *Shaky*, wavering, not to be depended upon. *Sharp stick*, urgent pursuit; "I am after him with a sharp stick." *Shaver*, a small boy. *Shinning around*, running around, usually to borrow money. *Shindy*, a fracas. *Shine*, conceit; "I'll take the shine out of him." *Shine*, boot-black's cry for "black your boots." *Shot in the neck*, drunken. *Shote*, a worthless fellow. *Shucks* (corn-husks usually thrown away), good for nothing; "he ain't worth shucks." *Shy*, throw; "he shied a brick at me." *Side-winder*, a heavy blow with the fist. *Sight*, a great many; "there was a sight of people." *Skeeziks*, a mean fellow; "there goes that old skeeziks." *Skunk*, utterly defeat. *Slang-wanger*, a noisy and reckless talker. *Slap jack*, a pan cake. *Slick*, easy; "slick as grease," or "as a whistle." *Slide*, let go; "let her slide." *Slope*, run away. *Sloshing around*, bragging, bullying. *Small potatoes*, of little account; "he's small potatoes, and few in a hill." *Snag*, any obstruction. *Smart bit*, a chance, or *sprinkle*, considerable of anything. *Sneezed at*, not to be, not to be lightly considered. *Snoop*, snatch slyly in bits or trifles. *Snorter*, superior; "our congressman is a snorter." *Sockdolager* (vulgarism for doxology), a finishing blow. *Soft saucer*, or *soup*, flattery. *Some*, excelling; "he's some on figures." *Some punkins*, smart. *Spark*, "court" a girl; a *spark*, a lover, or sweetheart. *Spell*, a period of time; "there's been quite a spell of rain." *To spell*, to relieve; "take my spell at the wheel." *Splurge*, swaggering demonstration. *Spread*, do one's best; "he has just spread himself on that question." *Sprouts*, experience, usually punitive and unpleasant; "we'll put you through a course of sprouts." *Square*, even with; "I'll get square with you;" "he's on the square," or "*all right*;" sound, honest, dealing fairly. *Squatter*, one occupying land or a place to which he has no legal right. *Stag dance*, or *party*, a company of men only. *Stall*, stick fast; "the oxen got stalled in the mud." *Stand up to the rack*, fodder or no fodder, risk the consequences; equivalent to "face the music." *Starer*, an efficient man, one who "rushes things." *Steep*, exaggerated; "oh! that's too steep." *Straight out*, or *straight as a loon's leg*, undeviating in purpose or action. *Strapped*, having no money. *Streaked*, feeling uncertain, or frightened. *String on a*, in a trap or under management; "I've got him on a string." *Stuff*, hoax; "you can't stuff me with that." *Stump*, to challenge or dare; or make public political addresses (formerly in the west delivered from the stump of a tree); "he stumped his district." *Sucker*, a vagabond, or one who lives on others. *Swad*, many; "there's a swad of boys over there." *Swan*, for "swear." *Swap*, exchange. *Taken to do*, called to account. *Take back*, recant. *Take the rag off*, or *shine* or *conceit out of*, overcome, or humiliate. *Tall*, immense; "that's a tall yarn." *Taps*, firm standing; "he's on his taps." *Thundering*, exceedingly great; "he's doing a thundering business." *Too thin*, not to be believed. *Tie to*, confide in; "he'll do to tie to." *Tight place*, or

squeeze, trouble or difficulty. *To, at*; "he's down to Salem." *Top notch*, highest excellence. *Tote*, carry, or the thing carried; "the whole tote," or all of it. *Truck*, merchandise, particularly vegetables; "garden truck." *Tuckered out*, tired. *Ugly*, ill-tempered. *Up to the hilt*, to the full extent. *Up to snuff*, not to be deceived. *Woke up the wrong passenger*, made a dangerous mistake in attack. *Walk chalk*, depart at once. *Walking papers*, discharge from office or employment. *Walk into*, attack, dispose of; "he walked into the edibles," he ate eagerly; or as a threat; "I'll walk into your mutton," i.e., chastise you. *Want to know*, exclamation of surprise or curiosity. *Ways, no two*, no alternative; "no two ways about," it must be so, is so. *Whale*, thrash. *Wheel-horse*, a man who does the heavy work. *Whittle*, cut with a knife. *Whole cloth*, out of, entire, complete; "a lie out of whole cloth." *Whole team*, strong; "he's a whole team, and a horse to spare," he is sufficient to the undertaking. *Wilted*, backed down. *Wipe out*, exterminate. *Worst kind*, excessively; "I'm hungry the worst kind." *Wrathy*, angry, offended.

AMERICAN JOURNALISM is too important to be passed over without especial notice. If in England the press can claim to be "the fourth estate," it is at least second in point of power and influence in the United States, where the only superior power is the people themselves. There are published in the United States and Territories at this time (Jan., 1880) nearly 9000 newspapers and magazines, scattering their issues like an incessant fall of snow over every city, village, and farm from the St. Lawrence to the gulf, and from the Atlantic to the Pacific. About 800 of these are issued daily except Sundays (many of them on that day also); 60 are issued three times a week, 120 twice a week, nearly 7000 once a week, 40 once in two weeks, 90 semi-annually, 17 once in two months, and between 50 and 60 quarterly. The extremes of circulation vary widely. Some daily newspapers print 120,000 copies every day in the week except Sunday, and others print less than 1000. Certain weeklies have reached the enormous edition of a quarter of a million, and others print but a few hundreds. But the aggregate circulation of serial printed matter in the United States is immensely greater in variety, in extent, and in ratio to population, than in any other country. Of native-born whites the proportion of such as cannot read is insignificant; and the universal reading of newspapers is one of the peculiarities that first strikes the attention of a stranger. Free and unabashed as the air, the newspaper penetrates every nook and corner, circulates in every office and warehouse, in every parlor and hovel, in the hotel and the railway car, in the prison and the church. In 1870, according to the best authority, there were 5371 newspapers and periodicals in the United States, and 7642 in all the world besides. We had, therefore, one newspaper to every 6525 inhabitants; leaving to the world outside an average of one periodical for every 200,000 inhabitants. In Hudson's *History of Journalism* it is estimated that the number of copies of newspapers printed in Great Britain in 1870 was 350,000, and the same in France. The census returns show that over 1,500,000,000 copies were issued in the United States in the same year. That is to say, for every printed sheet in Great Britain, or France, there were more than four printed sheets in the United States. This ratio is doubtless greater to-day, for the increase of newspapers has been such in this country as to warrant the claim that the number of all journals is about the same as in all the world besides, while the aggregate circulation is at least one third more in the United States. The census to be taken this year (1880) will probably show one newspaper to about 500 of our population.

And yet journalism in the United States is comparatively of modern growth. The oldest newspaper in English is the *London Gazette*, begun in Nov., 1665. The oldest living newspaper, the *Frankfort Gazette*, started in 1615. The oldest in the United States is the *New Hampshire Gazette*, started in Oct., 1756; so that our journalism is only in its 125th year, while that of England is 90 years older. But the very first newspaper in this country was *Publick Occurrences*, issued in Boston, Sept. 25, 1690, by Richard Pearce for Benjamin Harris, and immediately suppressed by the government. Then came, April 20, 1704, the *Boston News-Letter*. In 1719 appeared in Boston the *Gazette*, and in Philadelphia the same year the *American Mercury*. In 1721 James Franklin started the *Boston Courant*, which lived under the care of Benjamin Franklin about six years. The *New York Gazette* started in 1725; the *Annapolis (Md.) Gazette* in 1727; the *Charleston (S. C.) Gazette* in 1731; the *Williamsburg (Va.) Gazette* in 1736. In his *History of Journalism* Hudson considers the subject by "eras." Within the first era, 1690-1704, the only noteworthy event, after the prompt suppression of the *Publick Occurrences*, happened in New York, where Benjamin Fletcher, then lieutenant-governor of the colony, having induced William Bradford, a printer of Philadelphia, to quit that city and set up in New York, caused the reprinting, in 1696, of a copy of the *London Gazette*, which contained an account of an engagement with the French not long before the peace of Ryswick. That was the only victory of types over official red tape in the 14 years following the suppression of the *Publick Occurrences*. However, news was circulated, much as it was in ancient Rome, in written and printed letters, circulars and hand-bills; and theological and political battles were fought in pamphlets, acknowledged or anonymous, the favorite weapon of the Mathers and other disputants of the time.

In the second "era," from 1704 to 1748, the American press made a decided start. On the 24th of April, 1704, John Campbell, of Boston, issued the first number of the

Boston News-Letter. This is usually referred to as the first American newspaper, and indeed so it was, for it lived through many vicissitudes 72 years, up to the dawning of the revolution. In 1719 Campbell was superseded as postmaster by William Brooker, who followed Campbell's example by starting a paper, the *Boston Gazette*, the second American newspaper; and then began newspaper quarrels, a feature of journalism still far too prominent. Campbell resented his removal from office, and the fight was hot and personal. The day after the starting of the *Gazette* in Boston, Andrew Bradford issued in Philadelphia the *American Weekly Mercury*, Dec. 2, 1719. He also was a postmaster; so the post-office and the press appear to have been early united in this country, and the union has never been broken. In later years three notable editors, Benjamin Franklin, Amos Kendall, and John M. Niles became postmasters-general; and an ex-editor is now postmaster of New York. Bradford died in 1742, and the paper was continued by his widow. On the 7th of Aug., 1721, the two Franklins—James and Benjamin—issued the first number of the *New England Courant*. Wars and contentions between journalists now increased, but the Franklins were too strong for their jealous opponents, one of whom, ex-postmaster Campbell, sold his *News-Letter* to Bartholomew Green, and became a justice of the peace. Newspaper warfare, however, though conspicuously violent in America, is a true British inheritance; for a century before Ben. Franklin's caustic pen was sharpened the writer of one London newspaper, referring to two of his contemporaries, said: "I have discovered the lies, forgeries, insolences, impieties, profanities, blasphemies of the two sheets."

American journalism was now fairly established. The *New York Gazette* was begun by William Bradford in Oct., 1725; the *New England Weekly Journal*, the fourth Boston newspaper, in 1727; the *Maryland Gazette* at Annapolis in 1727; Benjamin Franklin's *Universal Instructor in all the Arts and Sciences*, and *Pennsylvania Gazette* in Philadelphia in 1728; the *Weekly Rehearsal* in Boston in 1731, became the *Boston Evening Post* in 1735, and died of loyalty to the king in 1775; the *New York Weekly Journal*, Nov. 5, 1733, by John Peter Zenger, whose imprisonment for libel on the government, prosecution, trial, and acquittal through the efforts of Andrew Hamilton, the leader of the Pennsylvania bar, marked the first great triumph of the freedom of speech and of the press that is now one of the great foundation stones of our temple of liberty. The *Weekly Post Boy*, another New York paper, was speedily absorbed by Bradford's *Gazette*, Sept. 27, 1732; the *Rhode Island Gazette* was begun at Newport by James Franklin, but it lived only three months, and Franklin himself died in 1735. About the same time the printing press, the invention that long afterwards gave the south so much annoyance, began to invade that section. The *South Carolina Gazette* was begun in Charleston, Jan. 8, 1731; the *Virginia Gazette* at Williamsburg in 1736. Both these papers died young on the death of their proprietors, and both were resuscitated soon afterwards. Returning north we find the *Boston Weekly Post Boy* begun in 1734, by the old postmaster, Ellis Huske, who recommended the passage of the stamp act. In 1742, William Bradford, grandson of the New York printer, started the *Pennsylvania Journal and Weekly Advertiser*, one of the earliest and most vigorous supporters of colonial freedom. On the day before the odious stamp act was to go into effect the *Journal* inclosed its pages in black lines, and placed over its title the picture of a skull and cross-bones, with the legend "Expiring; in hope of a resurrection to life again;" with elsewhere, "Adieu, adieu, to the liberty of the press! Farewell liberty!" and as an epitaph, "The last remains of the *Pennsylvania Journal*, which departed this life the 31st of Oct., 1765, of a stamp in her vitals; aged 23 years." The paper, however, was not actually suspended. The *Maryland Gazette*, which had been suspended in 1736, was revived in 1745. A newspaper in the German language was issued at Germantown, Penn., in 1739, and another in Philadelphia in 1743. The last paper started in the colonial period was the *New York Evening Post*, begun in 1746, but it lived only about a year.

About the middle of the century the political heavens began to show signs of the coming revolution. Naturally, the cities where newspapers were issued became centers of political agitation. Though few in number, they were important in influence. In 1748 journals were issued in Boston, New York, Philadelphia, Annapolis, Williamsburg, and Charleston; only six places in all America that could boast of newspapers. In the same year Samuel Adams established in Boston the *Independent Advertiser*, an organ of the more ardent of those who were anxious to become "rebels." Then came the *New York Mercury*, begun by Hugh Gaine, Aug. 3, 1752. In 1753 the *Boston Gazette*, or *Weekly Advertiser*, appeared and lived until killed by the stamp act. The voices of freedom were growing in number and boldness; the Adamses, Otises, Warrens, Mayhews, Quincys, and others, filled newspapers and pamphlets with demands and arguments for freedom from England. The real organ of the New England patriots appeared April 7, 1755—the *Boston Gazette and Country Gentleman*. On the first day of the same year the *Connecticut Gazette* was begun at New Haven. The *Boston Gazette*, however, was the mouthpiece of the men who created the revolution; but it was not much of a "newspaper" in comparison with those of our day. It had two pages only, on half a sheet of crown paper—about the size of a single leaf from an ordinary ledger. While the British troops occupied Boston the *Gazette* was issued in Watertown, but returned to Boston after the troops left. The next new issue was the *North Carolina Gazette*, begun at

Newbern, Dec., 1755. Then came the *New Hampshire Gazette*, Oct. 7, 1756—the oldest American living journal, having been published without intermission and without a radical change of name to the present time. Other papers appeared as follows: *Boston Weekly Advertiser*, Aug. 22, 1757; *South Carolina and American General Gazette*, 1758; *Newport* (R. I.) *Mercury*, June 12, 1758, still living; the *New London Summary*, Aug. 8, 1758; another *New York Gazette*, Feb. 16, 1759; the *Wilmington* (Del.) *Courant*, 1761; the *Providence* (R. I.) *Gazette and County Journal*, 1762; the *Georgia Gazette*, Savannah, April 17, 1763; and the *New London Gazette*, afterwards the *Connecticut Gazette*, Nov. 1, 1763. The *Connecticut Courant* was begun at Hartford Nov. 19, 1764, and still lives; the *Cape Fear Gazette and Wilmington Advertiser* was begun in 1763; the *Portsmouth* (N. H.) *Mercury and Weekly Advertiser*, 1765; the *Maryland Gazette*, 1765; the *Gazette and Country Journal* at Charleston, 1765; the *Constitutional Courant*, Burlington, N. J., 1765 (one issue only); the *Virginia Gazette*, 1766, the first newspaper to publish, ten years later, the full copy of the declaration of independence. At the commencement of the revolution there were seven newspapers published in New England, four in New York, and two in Virginia. One of the most important of the revolutionary newspapers was the *New York Journal, or General Advertiser*, started May 29, 1767, by John Holt, under the auspices of George Clinton and Philip Schuyler, two prominent patriot leaders. When the British took possession of New York, the *Journal* was removed to Kingston, and thence to Poughkeepsie. The British were not without a voice amid all this array of revolutionary prints. Their organ in New York was the *Royal Gazetteer*, better known as *Rivington's Gazette*, from the proprietor, James Rivington, who enjoyed the distinction of several mobbings by the "Sons of Liberty" and other mysterious organizations. In Boston the royalist paper was the *Chronicle*, the proprietors of which—Mein & Fleming—received similar treatment. This paper died in 1770 for want of patronage, but Rivington's paper lived until the war was over, then pretended to be converted, but was not trusted, and soon died. One of Rivington's best contributors was Major André. In 1767 appeared the *Pennsylvania Chronicle*; in 1768, at Salem, Mass., the *Essex Gazette*, now the *Salem Gazette*; also the *New York Chronicle*, short lived; and Oct. 13, 1769, the *Cape Fear Mercury*, at Wilmington, N. C.

It is unnecessary to mention every newspaper of those times. A few were especially conspicuous, such as the *Massachusetts Spy*, established by Isaac Thomas. The 49 newspapers established in the colonies from 1748 to the peace of 1783 were weekly or semi-weekly issues. Between 1690 and 1783, 67 newspapers have been started, but 43 only were living when peace was concluded.

With peace and independence came an entire revolution in the spirit of the press. Journals which lately had fought side by side, soon ranged in opposing and hostile fleets, as the leaders and organs of contending parties, of which the chief were the federalist and the republican, the latter soon changing into the democratic party. We have only to say of this period—1783 to 1812—that in the early portion the virulence of partisanship, the shocking language used by the press in political warfare, would be scarcely believed if we had space to quote it. Even Washington, who came from Yorktown like a demigod, received more wicked and vile abuse than would now be given to an abandoned felon. This bitterness was conspicuous during and after his second term, extended through Adams' administration and Jefferson's two terms, and was mollified only for a time by the war with England. After that war the democratic press preached a crusade against "blue-light federalists," and bad language flowed anew until the re-election of Monroe without opposition brought in the "era of good feeling" and a general suspension of hostilities. Among the leading journals and journalists of this period were many of the papers above named that lived through the revolution; the *Journal and Argus*, in New York, by Thomas Greenleaf; the *American Citizen*, by James Cheetham; the *Evening Post*, now the *New York Evening Post*, by William Coleman; the *New York Packet*, by Samuel London; the *Massachusetts Spy*, by Isaiah Thomas; the *Massachusetts Centinel*, afterwards the *Columbian Centinel*, by Benjamin Russell; the *Philadelphia Aurora*, by Benjamin Franklin Bache, etc. One of the severest word-battles was over the alien and sedition laws, in which the liberty of the press was, or seemed to be, seriously threatened.

The first daily newspaper in the United States was the *American Daily Advertiser*, issued in Philadelphia in 1784—now the *North American*. Next year came the *New York Daily Advertiser*, for some time edited by the poet Freneau. The *Independent Journal*, published in New York, was the paper through which Hamilton, Madison, and Jay gave the world the remarkable articles now collectively known as *The Federalist*. As our western country became settled, the press followed closely the pioneer, as in later days—during the building of the Pacific railroad—the peripatetic office of the *Frontier Index* kept just ahead of the rails and the locomotive. In 1786 the *Pittsburgh* (Pa.) *Gazette* was begun, and still lives; and so we might follow the press directly onward to the shores of the Pacific. The combinations of papers with each other have been infinite; but a single instance will illustrate—that of the Philadelphia *North American*, in which are united ten different journals, viz.: the *Pennsylvania Packet*, established in 1771; the *American Daily Advertiser*, 1784; the *Gazette of the United States*, 1789; the *Evening Advertiser*, 1793; the *United States Gazette*, 1804; the *True American*, 1820; the *Commercial Chronicle*, 1820; the *Union*, 1820; the *North American*, 1839; and the *Commercial Herald*, 1840.

What mixtures of political principles must have been taken down in those nine swallows! Returning to daily newspapers, we remark that of many hundred daily and other newspapers started in New York city alone from the commencement of Bradford's *Gazette* in 1725 to the year 1827, only two are living—the *Commercial Advertiser* and the *Evening Post*. Death, it is said, loves a shining mark, and journalism appears to have given his arrows abundant opportunity. No other field of intellectual or pecuniary enterprise is at once so attractive and so dangerous. It would occupy nearly the whole of one of the eight-page journals of to-day to print merely the names of newspapers that have started since 1690 only to fade like rootless plants under a fervid sun.

Enough has been given to convey an idea of the early history of journalism in the colonies and the United States. But the history of "newspapers" as such does not commence until about 1820. Before and during the revolution the ambition of journalism was to crystallize public opinion. The news printed was chiefly from foreign countries. It is true, the first sheet was entitled *Publick Occurrences*, but its small installment of domestic news so filled with surprise the powers that were, that they immediately suppressed the daring innovation. Thenceforth the greater portion of journals was occupied with discussion, and news was hardly so much as a secondary consideration. Their columns were filled with dissertations on every possible subject save the things at the time most deserving of notice. The price of newspapers was high and their circulation limited. Indeed, it was not until the introduction of rotary presses that any considerable circulation could be "worked off." Ben. Franklin was content with the old Ramage press, a clumsy wooden construction that required a separate "pull" for every page, whose utmost capacity would scarcely produce a hundred perfected sheets in an hour. If his soul could look out through the dull eyes of his statue in Printing-house square, how it would glow with astonishment to see under the street beneath his feet 20,000 newspapers, each one as large as ten of his, printed, cut, and folded in that same space of an hour. Soon after 1830 there was started in New York a paper which was sold for one cent—a daring innovation indeed, when the common price was sixpence. It was specially devoted to local as well as general news, and speedily attained a circulation that, for the period, was phenomenal. This was *The Sun*, the pioneer of the penny press. In 1835 it was followed by *The Herald*, also a one-cent paper, which went on from prosperity to prosperity until it stands to-day among the few great newspapers in the world. *The Tribune*, also a one-cent paper at the time, was started in 1841 by Horace Greeley, and is now in many respects without a rival. The cognate ideas of home news and low prices revolutionized journalism. The mammoth sheets of the past were distanced and defeated, and by degrees the greater portion of them paid more attention to news and less to discussion, and in many instances greatly reduced their prices. We then had real newspapers, and the getting of the news became the publisher's first aim. Expresses were established on steamboats and railways, and where these were lacking, news came by "pony express," or any other available means. Carrier-pigeons were tried, but they did not succeed. Boats ventured far out to sea to intercept incoming ships; special correspondents were sent to various points, and in one instance a fast-sailing pilot-boat was sent across the Atlantic. Competition became so intense and the expense so great that neighboring journals combined to share the costs and the benefits. So arose the harbor-news association, and a little later the associated press. The latter association, which now spreads its news-gathering net over all the habitable earth, was a necessary result of the introduction of the magnetic telegraph. That invention annihilated space, and made competition by horses or steam impossible. At first we had fifty words or so "by telegraph" from Washington, at a round price. To-day we have column upon column every morning by the same wonderful conveyance from every state and territory of our country, from all the nations of Europe and Asia; literally "from Greenland's icy mountains to India's coral strand."

Having the news, the next question was how to circulate it. Here the inventive genius of America came to the publisher's relief, first in Hoe's steam rotary press, of from two to ten cylinders, which might throw off 10,000 papers in an hour. Then came the perfecting press, printing both sides at once from a continuous roll of white paper and cutting off each paper at the proper point. Still later came the most important of all: the stereotyping of the original type-pages and the production of one or a hundred casts, as might be desired, and that, too, in a space of time not exceeding 15 minutes for a page of stereotype. The problem of circulation was thus settled. It is now merely a question of how many presses are run; for with enough of them a daily newspaper could as well print on a morning before sunrise half a million as half a hundred thousand. The result of these and other inventions is, that where Franklin could produce in an hour 100 sheets of four small pages, to be afterwards slowly folded by hand, the modern press will produce 15,000 to 20,000 sheets of eight, twelve, or sixteen pages—each page as large as the whole of Franklin's paper, beautifully printed, the pages cut, sometimes the backs pasted together, and all folded and ready for mailing or delivery, in the equivalent 60 minutes. The capacity of newspaper production is practically unlimited, and circulation is henceforth to be determined only by demand.

We lack space to follow the course of journalism closely through its hundred battles since the war of 1812. How the partisans raved over the first defeat of gen. Jackson in 1824; the incipient rebellion in South Carolina; Jackson's war with the United States

bank; the furious anti-masonic crusade; the tremendous financial disasters of 1837, which overthrew the Democratic party; the gallant but futile struggles of Henry Clay; the war of tariff and free-trade, "still beginning, never ending;" the native American campaign; the annexation of Texas; the Mexican war; the contest of the north and south, that found an ending which was not an end in the compromise measures; the California annexation and the gold craze; the Kansas struggle; the death of the whig, the birth of the republican, and the division of the democratic party; the election of Lincoln; the dreadful struggle with the rebellion; the triumph of the union; the dark days of commercial distress—all these are in the history of journalism, but so vividly remembered that further reference is quite unnecessary.

Of the men who have been conspicuous in connection with American journalism, we cannot pretend to give a catalogue. Before and during the revolution, and down to the second war with England, nearly all public men of importance spoke through the press. In the newspapers were heard James Otis, Samuel Adams, Joseph Warren, John Hancock, Jonathan Mayhew, and scores of their brethren. Jefferson, Madison, Burr, Hamilton, Clinton, Jay, and scores of other politicians were heard in the same manner. Benjamin Franklin, and Noah Webster, and Charles Carroll, of Carrollton, were early in the long line of "able editors." William Cobbett created a sensation in Philadelphia with his *Porcupine*; and James Cheetham, and William Duane, and William Coleman were eminent in this field. In the later time we find such names as Seba Smith, Jr., the original "Major Jack Downing;" Francis Hall, William L. Stone, John Inman and Robert C. Sands of the New York *Commercial Advertiser*; Mordecai M. Noah, Nathaniel Willis, grandfather of the poet; William D. Gallagher, William Schouler, Richard Haughton, Samuel Medary, Charles C. Hazewell, Samuel S. Cox, John B. McCullough, Joseph Medill, Horace White, Wilbur F. Storey, William Cullen Bryant, James Watson Webb, Horace Greeley, James Gordon Bennett, Henry J. Raymond, Manton Marble, James and Erastus Brooks, Charles King, William Leggett, John Bigelow, Thurlow Weed, Edwin Croswell, Redwood Fisher, Joseph Gales, Hezekiah Niles, Francis P. Blair, Duff Green, William W. Seaton, John Rives, Amos Kendall, Thomas Ritchie, George D. Prentice, George W. Kendall, Don Piatt, Frederick Douglass, Solomon Southwick, John H. Pleasants, Isaac Hill, William Cassidy, Henry Wheaton, Moses Y. Beach, Sidney E. Morse, Henry W. Bellows, Henry M. Field, Henry Ward Beecher, Gulian C. Verplanck; George P. Morris, Nathaniel P. Willis, Park Benjamin, Henry B. Anthony, Whitelaw Reid, William Sprague, George Wm. Curtis, Josiah G. Holland, William D. Howells, George H. Andrews, David Hale, Gerard Hallock, William C. Prime, David M. Stone, William W. Clapp, Joseph T. Buckingham, Theophilus Parsons, George Lunt, William Lloyd Garrison, John Neal, Samuel Bowles, John S. Sleeper, E. C. Bailey, R. Barnwell Rhett, Rufus Dawes, John Forsyth, George W. Childs, John W. Forney, William M. Swain, Russel Jarvis, Willis Hall, Charles A. Dana, Sidney Howard Gay, Oliver Johnson, John Russell Young, William G. Brownlow, Murat Halsted, Henry Watterson, Richard Smith, George Dawson, Thomas Kinsella, Jonas M. Bundy, Hugh Hastings, Charles E. Smith, and three times as many more quite as deserving of mention.

Of the influence of this aggregation of intellect upon the country we set forth no opinion. It is certain that the once almost despised journalist who took cord-wood and garden-truck in pay for his 7 by 9 sheet, has risen to the highest social and political position. While about the last class of citizens who are willing to do as they ask others to do—assume office and discharge its duties—not a few of them have been chosen to such duties by the people. No professional journalist has yet been president of the United States, but one has been vice-president; a few have been governors of states; a large number have been United States senators and members of congress; some of them have been ministers to foreign countries, and several have declined that honor. One is now a cabinet officer. In the 41st congress there were 8 editors in the senate and 26 in the house, the speaker being one of them. In the succeeding congresses the numbers have been about the same. The proportions in most of the state legislatures are considerably larger.

Some of the prominent features of modern journalism, besides the dominant idea of the news and all the news, are the fullness of reports of matters of public importance. When the news of the great battle of Waterloo reached London, the *Times* told the story in less than half a column. Such an event to-day would occupy twenty or thirty columns. The resources of journalism were well exemplified in our rebellion, when "extras" were issued almost hourly on important occasions, and the press was constantly in motion. Modern reporting is nearly perfect; but that does not satisfy the newspapers, and it has been supplemented by a system of endless and minute inquiry known as "interviewing," whereby all men who are suspected of knowing anything of any particular matter are visited by reporters and questioned and cross-questioned until the last item of information has been extracted; and this not only in matters of fact but in matters of opinion. Journalism compels the world to stand and testify on every conceivable topic that may, in the journalist's opinion, interest the reader. Add to this searching inquiry the inevitable editorial comment, and it must appear that the research and the combinations of facts, opinions, and speculations thereon by modern journalism are as complete and as exhaustive, though not as guarded, as the most formal and satisfactory trial in a court of justice. This "interview" is a kind of moral rack on which any man may be

stretched without a moment's warning. Whether its results are good or bad, we leave others to judge.

A country that admits into citizenship all people and all nations must naturally produce a polyglot press. The English language is our lawful inheritance; French or Spanish were bought, or annexed; German, the Scandinavian tongues and some others came with immigration; and Indian languages are indigenous. At the beginning of 1880, there were of journalistic publications in the United States, besides English, about 220 German; 35 French; 25 Spanish; 25 Norwegian, Danish, and Swedish; 10 Bohemian; 10 Hollandish; 5 Welsh; 2 Portuguese; 2 Polish; 1 Hebrew, 1 Cherokee, and 1 Choctaw; and, we believe, a journal in raised letters for the blind, making 16 or 17 different languages, to which may be added old Irish, or Erse, to which some journals devote a portion of their space.

The burden of the press in such a land is naturally political: and a great majority of the newspapers are committed to one or another party; a few claim to be independent, but absolute independence of parties is a difficult position to maintain, and the only really independent journals, politically speaking, are those and those only which never meddle with politics, parties, or candidates at all. Next to political journals, in number and importance, are those devoted to religious or sectarian interests. Of these there are in the United States about 450, and many of them have very extensive circulation. Every sect amounting to a "denomination," except the Shakers, has its voice in journalism. The city of New York may serve as a sample of the whole country. There are issued in that city about 50 religious or sectarian journals and magazines; of these 9 are Roman Catholic, 8 Union Evangelical, 7 Protestant Episcopal, 3 Baptist, 3 Methodist, 3 Jewish, 2 Presbyterian, 2 Congregational—or Union under Congregational management, 2 Dutch Reformed, one each for the Disciples, Swedenborgians, Lutherans, and Unitarians; 4 "non-sectarian," and 1 freethinker. Religious journalism, now of great extent and importance, is of recent origin, dating back only to the beginning of 1816, when the *Boston Recorder* was started, with Sidney E. Morse as editor. The *Recorder* was long ago merged in *The Congregationalist*. The *Christian Watchman*, now *The Watchman and Reflector*, also of Boston, was started in 1819 by Baptists; the *New York Observer* (Presbyterian) in 1820 by Morse, who had left the *Recorder*, and one of his brothers; *Zion's Herald* (Methodist) in Boston about the same time; the *Christian Register* (Unitarian), 1821; the *Christian Intelligencer* (Dutch Reformed), 1830; the *Evangelist* (Presbyterian) in 1833; the *Christian Advocate and Journal* (Methodist Episcopal), by the M. E. Book Concern in New York, about 1835.

Illustrated journals have in late years greatly improved, and in some notable instances, such as Harper's *Journal of Civilization*, have taken the front rank in perfection of artistic workmanship and in extent of circulation. Others are the *Christian Weekly*, *Frank Leslie's Illustrated Newspaper*, and among magazines the monthlies issued by Appleton, Scribner, and the Harpers. Distinctive comic journalism has never flourished for any considerable time, though at present it is fairly under way. A hundred *Punches* have been born, but very few lived to celebrate an anniversary of their natal day. Business and trade have a strong showing among journals, there being scarcely a calling of any importance that has not from one to a dozen typographic mouthpieces. There are hundreds of journals devoted exclusively to finance and commerce in general. Special branches have their organs; as banking, life, fire, marine, and accident insurance, real estate, mining, railways, milling, engineering, building, upholstery, lumbering, prices-current, mechanics in general, glass, crockery, iron, leather, boots and shoes, tobacco, cotton, gas, wines and liquors, telegraphing, brewing, chemistry, microscopy, phonography, photography, bricks and pottery, carpet trade, drugs, harness, carriages, watches and clocks, car-building, plumbing, sewing-machines, publishing, printing, etc. Journals are devoted to legal affairs, to sports and games, to art and music, to the fashions, to the army and navy, militia, etc. Agriculture and horticulture engage the attention of more than a hundred journals and magazines; medicine and surgery of about seventy; affairs concerning colleges, schools, and education generally, of more than a hundred; about forty are intended for children and youth; masonic and other secret societies have their organs: indeed, it would be difficult to find any business, association, or prominent enterprise that has not its journalistic means of communication with the world. In all this maze of purposes one business is never overlooked—that of criticism. Every interest, business, profession, party, sect, searchingly criticises every other purpose, act, person, and thing. Not only the regular literary and critical publications, but every news, political, and trade journal considers criticism among the first and most important of its functions. Unrestrained by any other will than his own, every writer is free to arraign, try, convict, and condemn everybody else—and it must be admitted that the privilege is most literally and liberally used.

AMERICAN LITERATURE. That the earliest literature of the part of America now comprising the United States should be distinctly English was inevitable. This was the case until near the close of the 17th c., when the vigorous and prolific Increase Mather came before the world with his theological works, numbering 85 in all. Mather was the first native writer of any considerable fame. He was the son of Richard Mather, a sturdy nonconformist divine, who came here in 1636, and was soon afterwards the pastor of a

church in Dorchester, Mass., where Increase was born in 1639. The father lived to be 86 years old, and was in the ministry 66 years. But father and son were eclipsed by the more prolific and more famous son of Increase, Cotton Mather, the author of *Magnalia Christi Americana*, or *Ecclesiastical History of New England from its First Planting in the year 1620 unto the year of our Lord 1698*. He was an early and late believer in the reality of witchcraft, and opposer of it as a work of Satan; a theologian of the strictest Puritan type; an uncompromising defender of the religion of the day; while for fecundity he rivaled the most famous of the authors of England. An incomplete catalogue of his works numbers 332 separate publications, and there remain six great folio volumes of closely written MSS. that no one has had courage to print, and few have had courage to read. He was b. in Boston, Feb. 12, 1663, and d. Feb. 13, 1728; was a graduate of Harvard college, and used his pen not only for religion and against Satan and the witches, but as an early advocate of temperance; he wrote and preached for seamen, instructed negroes, set an example of abolishing flogging in schools by substituting moral suasion in his own family, and wrote extensively upon historical subjects. He was named after John Cotton, another voluminous theological controvertist, whose daughter was Cotton Mather's mother, but John Cotton was English-born and 48 years old when he came to America. He was noted for using the long and quaint title then in vogue among writers of religious tracts and books.

The earliest literary work in the English language in the colonies was a translation of Ovid's *Metamorphoses*, made in Virginia by George Sandys, the treasurer of the Virginia company. It was written in the earliest years of the settlement, probably begun in 1607, and printed in London in 1626. In coming before the public Sandys was anticipated by capt. John Smith, who published in 1608 an account of the new colony; in 1612 a map of Virginia and description of the country; in 1616 a description of New England; and in 1620 *New England's Trials*.

The foundation of the literature of a new world was laid on the 28th of Oct., 1636, when the general court at Boston voted £400 toward a school or college. Two years later John Harvard, an English clergyman of superior education, who had been scarcely a year in the colony, gave twice as much money and a library of 320 volumes—a great collection for those times—in aid of the "school or college." Thus began Harvard college, at Cambridge, Mass., of which Increase Mather was the first native president. Around this venerable institution and its co-laborers, William and Mary, and Yale, and, later, Princeton and Columbia, cluster the names and the works that created American literature.

There are many curiosities that mark the early period, such as the *Bay Psalm Book*, the first volume of importance printed in the colonies, Cambridge, 1640. In this curious work the struggle between literal translation and what we should now call respectable English was disastrous only to the language. The reading of some of the psalms in church to-day would provoke laughter fit for a comedy theatre. Another curious work was *The Simple Cobbler of Agawam in America*, etc., printed in London in 1646. The author was Nathaniel Ward, pastor of a church at Ipswich. His work was a caustic review of English state, church, and social affairs, with occasional hits nearer home. Other English-American writers before the Mathers were Thomas Hooper, the theologian; John Winthrop, first governor of Massachusetts, who wrote tolerable verses; William Bradford, also governor and versifier; Roger Williams, the champion of toleration and founder of Rhode Island and the Providence plantations; John Eliot, the "apostle to the Indians," who translated the Bible into the language of the native tribes; Anne Bradstreet, author of the first volume of poems published in New England (daughter of Thomas Dudley, the second governor of the Massachusetts colony); Peter Folger (maternal grandfather of Benjamin Franklin), who wrote in clumsy rhyme *A Looking Glass for the Times, or the Former Spirit of New England revived in this Generation*; Michael Wigglesworth, theologian, author of quaint religious verse. Then came the Mathers, father, son, and grandson, where indeed "the last shall be first," under whose shadows march in dim eclipse a host of miscellaneous writers. The first name that stands forth on the list is that of Cadwallader Colden, quite out of the New England pale, a native of Scotland and a resident of the colony of New York, who left an excellent *History of the Five Indian Nations*, and some works on scientific subjects.

Entering the 18th c., we come at once upon a name that towers high above all preceding, and in metaphysics and religious criticism above nearly all following American names, the last and greatest of the Puritan apostles, the Boanerges of Calvinism, Jonathan Edwards, only son in a family of fourteen children, whose influence still permeates New England, where his life was spent, and whose name is treasured in the college of New Jersey, over which he presided for the last few months of his life. This is not the place to record his history. His influence was not confined to this country, but was long a living power in all English theology. Edwards has been called by some admirer "the first man of the world during the second quarter of the 18th century." His style, though not always lucid, is vigorous; his eloquence was fervid, and his life modest and simple. Ten large volumes comprised his share of American literature. The most famous of his works is known as *Edwards on the Will*. A singular event will illustrate both his modesty and his power: Once when Whitfield, the wonderful preacher, failed to appear as appointed, Edwards, a young man almost unknown in

person to the public, took the place of the expected orator. He naturally thought that many of the audience would leave, but they did not; they soon became attentive, and perfect silence reigned. They were soon chained to his words; then, as was the custom, one after another rose to hear more perfectly; then they all rose, and pressed around him, and before he concluded, sobs and tears attested the power of simple argument modestly delivered. Edwards was b. in Conn., Oct. 5, 1703, and d. March 22, 1758. It has been the habit of some English writers to say that there is no such thing as American literature, assigning as their reason that the sameness of language makes it impossible, since it is all English literature. However, even those writers graciously admit that there are American authors, and unanimously name Jonathan Edwards as one. The name next following is that of Benjamin Franklin, whom, it is safe to say, all the world will admit to have been the most American of Americans. His career and works, literary and political, in philosophy, in social economics, and in diplomacy, are too well known for more than mere mention. Every child knows, or should know, the story of the poor apprentice who "tore the lightning from heaven and the scepter from tyrants," and left to American literature the wisdom of an honest and a great mind. The struggle for liberty opened in the third quarter of the 18th c., and tinged for a time all spoken and written literature. With Edwards the domination of theology, which had continued from the landing of the Pilgrims, passed away, and philosophy and belles-lettres began to have audience. But the revolution suspended literary activity, except in the political sphere, and the names next after Franklin belong to the forum as well as the printed page. Prof. John Winthrop, of Harvard, intervened with lectures on earthquakes, storms, astronomy, and miscellaneous themes; and capt. Benjamin Church wrote a *History of King Philip's War*. William Livingston, governor of New York in 1776, was a notable writer for the newspapers, and author of a heavy didactic poem. Ezra Stiles, president of Yale college, left 45 volumes of diary and manuscripts. The first woman author after Anne Bradstreet, in our annals, was Mercy Warren (daughter of col. James Otis, of Barnstable, Mass.), who wrote *The Adulator*, a political satire; *The Sack of Rome*, and *The Ladies of Castile*, works highly commended by John Adams.

Reaching the critical period of revolution, we pass hastily over the remainder of the century, necessarily mingling together orators and writers. James Otis was the oldest of the revolutionary leaders, a ready writer and a remarkable speaker. John Adams was early in the war of words. On the royalist side, "parson Peters" (the Rev. Samuel Peters) wrote, at a later period, a caustic *History of Connecticut*, full of wit and malice, and not bound by the truth. Thomas Paine must rank highest among those who contributed not only to our political emancipation but also to our literary fame. Francis Hopkinson, satirist, and William Bartram, traveler in the southern colonies, must be mentioned, the latter for his admirable descriptive powers. Thomas Jefferson; Josiah Quincy, jr.; Jeremy Belknap, distinguished clergyman; Lindley Murray, whose grammar was the *bête noir* of our grandfathers and grandmothers; John Jay, Huguenot jurist; Benjamin Rush, physician and philosopher, friend of Franklin; Richard Rush, diplomat; William C. Redfield, meteorologist; Jonathan M. Sewall, poet; Hugh H. Brackenridge, politician, judge, and satirist—these bring us to John Trumbull, the author of *McFingal*, the best imitation of *Hudibras* ever produced, and of *The Progress of Dullness*, an elaborate epic poem. Then come John Ledyard, one of the most distinguished of travelers; and Philip Freneau, the first American poet of real fame, a prolific and gifted writer, from whom the fastidious Campbell deigned to borrow. James Madison and Gouverneur Morris must be mentioned; and then Timothy Dwight, president of Yale college, theologian and poet. We now find in the foreground a dark shade characteristic of our country—Phillis, a full-blooded African, brought here when a child, bought in the Boston slave market by a Mrs. Wheatly, whose name she took; a prodigy of intellect, and a poet of no mean order, complimented by Washington and by men of high position in New England. Another writer of the period was Benjamin Thompson, a student of science, better known as count Rumford; another poet was David Humphries, household and camp companion of Washington. He is followed by our first epic poet, whose works are still read, Joel Barlow, author of *The Vision of Columbus*, and *The Hasty Pudding*. Chief justice John Marshall's name brings us back to sober prose in his *Life of Washington*. Hannah Adams wrote a *History of New England*; Henry Lee wrote *Memoirs of the War in the Southern part of the United States*; Royal Tyler follows, a wit, a poet, and a chief justice, who wrote in one moment the gravest legal opinions and in the next the most delightful squibs.

And now we reach the name of a man whose untimely taking off was the destruction of the federal party, and doubtless changed the partisan complexion, if not the theory, of our government—Alexander Hamilton, Washington's mentor and chief reliance, the Ajax of federalism. Hamilton's writings are chiefly political, but they are characteristically American, and of the highest order of composition. Fisher Ames, the federal leader in congress, wrote political essays, and pronounced before the Massachusetts legislature a noble eulogy upon Washington. Noah Webster appears, who, if not a literary magnate himself, was the cause and aid of literature in others. Jedediah Morse gave the country its first geographical works soon after the establishment of the government. Albert Gallatin is a name deservedly famous in diplomacy and as a writer on finance. Fran-

cis Wayland, president of Brown university, left an undying *Treatise on Human Responsibility*, and other works. James Kent gave us *Commentaries on American Law*, which compelled the *Edinburgh Review* to say of him and Story, "They have done more than any other men to put an end to the indifference of English lawyers to the learning of their American brethren." Kent was of New York; and about this time that city had a savant of rare intellectual ability in Dr. Samuel L. Mitchell, and a historian and dramatic author of note in William Dunlap. At the same time the whole land, and English people everywhere, were honored with the first American ornithologist, Alexander Wilson—a Scotchman, however, by birth. His seventy-volume *Ornithology* is a standard work. But we must close the century by rapid mention of John Quincy Adams, young but becoming known as a writer; De Witt Clinton, beginning to be heard from; Joseph Dennie, journalist, author, and critic, the "Lay Preacher" of a monthly publication; David Rittenhouse, astronomer and mathematician, of whom high authority said, "We should place him in point of scientific merit second to Franklin alone;" and, to finish the century and the revolutionary era, we name the first American novelist, Charles Brockden Brown, a Philadelphian, whose Quaker ancestors came over with William Penn. Brown's *Wieland*, or the *Transformation* (1798), *Ormond*, or the *Secret Witness* (1799), and *Arthur Mervyn* (1800), are works of acknowledged merit, and he is highly eulogized by Prescott.

The earliest American name of note in the book-making of the 19th c. is William Wirt, a Maryland lawyer, author of *Letters of a British Spy*, and an admirable *Life of Patrick Henry*, attorney-general of the United States, and once a candidate for president. About the same time the country was amused by Thomas Green Fessenden, who sent forth *Terrible Tractoriation*, a satire on the wonderful medical discovery of metallic tractors; also political satire; and a humorous story in verse called *The Country Lovers*, which was republished in England. In theological writing the names of Archibald Alexander and Lyman Beecher are conspicuous; and amidst this abundance of seriousness and satire comes the learned, pleasant, and genial John James Audubon, the distinguished American ornithologist and naturalist, of whose great book Cuvier said, "It is the most magnificent monument that art has ever erected to ornithology."

In the days of these men and their immediate successors, literary activity was suppressed by the political events of the hour. We had barely escaped war with France in Jefferson's administration, but did not escape one with England in Madison's. There could be little of importation from abroad, and the means for producing books at home were primitive and restricted. Our next literature was necessarily for the most part political, and the forum was its place of expression. There we find Henry Clay, Calhoun, and, somewhat later, Webster and Benton. But during or after the war, we hear from such writers as Henry M. Breckenridge (*History of the Second War with Great Britain*); Moses Stuart, the father of American biblical criticism; William Ellery Channing, theologian, and writer on many subjects, of whom it was said in *Frazer's Magazine* "Channing is unquestionably the first writer of the age. From his writings may be extracted some of the richest poetry and richest conceptions clothed in language unfortunately for our literature too little studied in the days in which we live." Then Timothy Flint first made us acquainted with the valley of the Mississippi; and Henry Wheaton, in his *History of the North Men*, gave us our first knowledge of the people who discovered and dwelt in America five centuries before Columbus made the second discovery.

Both the political and literary fields now began to glow with the rising fame of Daniel Webster and Thomas Hart Benton, for years the eastern and western stars in the galaxy of American statesmen, while Clay and Calhoun shone steadily from the south. The true day of American literature was at hand; the sun that was to rise never again to set while we are a nation was lighting the morning horizon—the literary sun, that came in the person of Washington Irving. Born after the revolution and of age just as the second war closed, he seems to have escaped the affliction of politics and partisanship, and grew up thoroughly a man of letters. It is quite unnecessary to refer to his works, historical or imaginative, for they are everywhere known. Irving was the first of note to employ that style of humorous exaggeration which has been so much abused in our days, and whose abuse foreigners choose to call the great blot upon American literature. We presume there will be no vote against accepting *Diedrich Knickerbocker* as a typical American author, the Magnus Apollo, in our galaxy of literature. There was another American author in the same period (John Sanderson), whose work, *The American in Paris*, was thought worthy of translation by no less a writer than Jules Verne. Gulian C. Verplanck appeared anonymously as a political satirist in 1819, and was afterwards the author of many discourses on art and literature. In 1827, Richard H. Dana published *The Buccaneer*, and in 1833 *The Idle Man*, the one highly praised and the other by William C. Bryant. The next conspicuous star in the literary galaxy is James Fenimore Cooper, the most prolific and most popular of American writers of fiction. "He wrote," says Bryant, "for mankind at large; hence it is that he has earned a fame wider than any author of modern times. The creation of his genius shall survive through centuries to come, and only perish with our language." Among poets of note at this period are Charles Sprague, Lydia H. Sigourney, James A. Hillhouse, Henry Timrod, and John G. C. Brainerd, whose edition in 1842, edited by John G. Whittier. In John Howard

Payne we had a precocious but gifted dramatist; in Henry Rowe Schoolcraft a diligent student and historian of the Indians; in Henry C. Carey an able political economist; in John Neal a poet and critic, and the first writer on American literature for foreign readers (in a series of articles in *Blackwood*); in Jared Sparks a careful and voluminous historian; in Edward Robinson an accomplished biblical scholar; and in William Ware a writer of classical romances.

William Cullen Bryant led the modern army of American poets by the publication of *Thanatopsis* in 1816, immediately followed by Joseph Rodman Drake, Fitz Greene Halleck, James G. Percival, and Maria Brooks. In the same period, or soon after, we find John P. Kennedy, the novelist, with *Swallow Barn* and *Horse Shoe Robinson*; Horace Mann on education; George Bush in biblical lore and Hebrew grammar; George Ticknor in *History of Spanish Literature*; James K. Paulding, co-laborer with Irving; Washington Allston, painter and poet; Robert C. Sands, in history and fiction; and minor lights.

Edward Everett, his brother Alexander H., William Prescott, and George Bancroft form the front rank of modern American historians, and at least three of them have won deservedly high renown; and later in the same department appear John L. Stephens, Richard Hildreth, John R. Brodhead, J. Lothrop Motley, and Francis Parkman. In lighter literature we find George P. Morris, George D. Prentice, Theodore S. Fay, William Gilmore Simms, Nathaniel P. Willis, Joseph C. Neal, Charles Fenno Hoffman, and Willis Gaylord Clark. George P. Marsh has written upon Scandinavian languages; S. G. Goodrich (Peter Parley) for the young; George B. Cheever on political and moral reform; Ralph Hoyt some unique poems; Robert T. Conrad successful dramas; Elihu Burritt (the "Learned Blacksmith") his reflections; Alfred B. Street pastoral poetry; William W. Story a volume of poems; Edwin P. Whipple critical essays; Donald G. Mitchell ("Ik Marvel") pleasant essays; Frederick S. Cozzens similar works; George W. Curtis the *Potiphar Papers*; William Allen Butler, *Nothing to Wear*; Robert Dale Owen on mysticism; A. L. Youmans on chemistry and other sciences; Richard Grant White on *Shakespeare*, and criticisms on grammar and words; William T. Adams ("Oliver Optic") for boys and girls; J. T. Trowbridge poems and domestic stories; and A. Bronson Alcott on education and philosophy.

Four distinguished American poets are living at this writing—Henry W. Longfellow, John G. Whittier, Oliver Wendell Holmes, and J. Russell Lowell. Among other poets to be mentioned are Edgar A. Poe, T. Buchanan Read, George H. Boker, Richard H. Stoddard, Thomas B. Aldrich, Edmund C. Stedman, Henry T. Tuckerman, and Joaquin Miller. Of humorists we have had lieut. Derby ("John Phoenix"), Mortimer M. Thompson ("Doesticks"), Charles G. Leland in the *Hans Breitman Ballads*, John G. Saxe, Samuel L. Clemens ("Mark Twain"), Francis Bret Harte, and a host of minor writers.

In both poetry and philosophy few names rank as high as that of Ralph Waldo Emerson, everywhere acknowledged as the first of idealist and speculative reasoners. He is in some degree followed by Henry D. Thoreau. The name of Nathaniel Hawthorne, author of *Twice Told Tales*, *The Scarlet Letter*, *The House of Seven Gables*, and *The Marble Faun*; of Theodore Parker, William H. Channing, Richard H. Dana, jr., Bayard Taylor, Josiah G. Holland, James Parton, Henry Ward Beecher, Theodore Winthrop, Thomas W. Higginson, Charles Dudley Warner, Moncure D. Conway, Edward Eggleston, William D. Howells, and of many others still busied in literature, will occur to the intelligent reader.

American literature owes much to woman. In no other country are there so many female writers, or so large a proportion of women of superior education. We have casually mentioned a few names, but there are many more that should be noted. Anne Bradstreet was the earliest, writing poems soon after the landing at Plymouth. Ann Eliza Schuyler (Mrs. John J. Bleecker) wrote a tragedy and poems just before the revolution. Hannah Adams, b. 1756, the first American woman to devote herself entirely to literature, wrote a *History of New England*, a *History of the Jews*, and *Views on Religious Opinions*. Susannah Rowson, b. about 1762, was the author of *Charlotte Temple*, the most popular story of the early part of this century, also of other stories, an opera, farces, poems, and sacred history. Tabitha Gilman (Mrs. Samuel Tenney), b. 1762, was the author of *Female Quakerism*; Eliza Leslie, b. 1787, was the first American woman who wrote stories for the young; Sarah Josepha Buell (Mrs. David Hale), poet and editor of the *Lady's Book*, wrote *Sketches of American Character*, *Sketches of all Distinguished Women*, and many tales and poems; Lydia Huntley (Mrs. Charles Sigourney), b. 1791, was for many years the foremost author of her sex in the country, and the first American woman to become well known abroad by her works; Caroline Harwood (Mrs. Samuel Gilman) produced poems, ballads, and sketches; Maria Gowen, or Mrs. Maria Brooks ("Maria del' Occidente"), b. 1795, was the author of *Zophiel, or the Bride of Seven*, a weird story in verse in seven cantos, and of various poems of merit, including *Idomen, or the Vale of Yumuri*, in which she tells the story of her singularly romantic life; Mrs. Follen, widow of prof. F., who was lost in the burning of the steam-boat *Lexington*, in 1840, was an interesting writer. The name of Catharine M. Sedgwick stands deservedly high, and her works, *A New England Tale*, *Red-wood*, *Hope Leslie*, *The Lincolns*, and others are held in esteem. Mrs. Hannah F. Lee's *Three Experiments in Living* won great popularity. Maria J. McIntosh ("Aunt Kitty") wrote tales for children, stories for older folks,

Woman in America, and other works. Lydia Maria Francis (Mrs. Lydia Maria Child) is a name widely known and honored for works adapted to the household, books of biography, and excellent *Letters from New York*. The sisters Lucretia Maria and Margaret Miller Davidson were remarkable instances of precocity in verse and prose. Mrs. Emma C. Embury, daughter of Dr. J. R. Manley, wrote a volume of poems and many prose sketches. Caroline Lee Whiting (Mrs. Hentz) excelled in the same line. Sarah Helen Power (Mrs. Whitman) published a volume of poems of superior merit. Hannah F. Gould's name is familiar to all readers of verse. Margaret Fuller (Countess Ossoli), whose melancholy fate by shipwreck is not forgotten, was one of the most terse and vigorous of American writers, a thorough scholar, and a critic of rare ability in art, literature, and social science. Mrs. Ann S. Stephens is another popular author, her latest work being a *Pictorial History of the War for the Union*. Frances Sargent Locke (Mrs. F. S. Osgood) is a well-known writer of verse and prose, sketches, and of a drama. Elizabeth Oakes Prince (Mrs. E. Oakes Smith) has published poems, a number of stories, and two tragedies, one upon a purely American theme, called *Jacob Leisler*, relating to the politico-religious rebellion in New York in 1689. Caroline M. Stansbury (Mrs. C. M. Kirkland) wrote books and letters descriptive of the west as it was 40 years ago; also critical essays and fireside books, full of common-sense and keen insight of character.

Coming to modern days, we meet the name of Harriet E. Beecher (Mrs. H. B. Stowe), whose *Uncle Tom's Cabin* has had a wider reading than any other book written by a woman. She is the author of many other works of fiction and fact, and of a volume of poems. Elizabeth F. Lummis (Mrs. E. F. Ellet) has written *Women of the American Revolution*, *Pioneer Women of the West*, *Women Artists*, *Queens of American Society*, *Brides and Widows of the Bible*, and lighter works. Anna Cora Ogden (Mrs. A. C. Mowatt, and Mrs. Ritchie) is remembered as an actress of ability, and as author of *Mimic Life*, of the comedy of *Fashion*, and various stories. We hastily pass on, mentioning Mrs. Mary E. Hewitt's *Heroines of History*, and verses; Mrs. Emma D. E. N. Southworth's thirty-five volumes of novels; Susan Warner's *Wide, Wide World*, *Queechy*, and *Hills of the Shatemuc*; her sister Anna's *Wayfaring Hymns*; Mrs. Emily C. Judson's ("Fanny Forester") *Village Sketches*, and verses; Anna C. Lynch's (Mrs. Botta) *Handbook of Universal Literature*; and Caroline M. Fisher's (Mrs. C. M. Sawyer) verses. About 30 years ago, Mrs. Amelia B. Welby was one of the most popular of American poetic writers, and Lucy Hooper, who died at the age of 25, was the literary light of Long Island. Mrs. Estelle Anne Lewis has published many poems here and in Europe, letters of travel and on literature and art, and several dramas, one of which was accepted by Ristori; Julia Ward (Mrs. S. G. Howe) will be oftenest remembered by one of the least poetical of her universally excellent poems—*The Battle Hymn of the Republic*; she has published *Passion Flowers*, her first volume of poems; *Words for the Hour*, a second poetical volume; *Hippolytus, a Tragedy*, and many prose contributions in magazines and newspapers. The names of Alice Bradley (Mrs. Alice B. Neal, and Mrs. Haven), of Misses Catherine and Eleanor Ware, of Sarah S. Jacobs, and Mrs. Elizabeth C. Kinney, bring us to Sarah Jane Clarke (Mrs. Lippincott, or "Grace Greenwood"), whose lectures and letters from abroad are well known to cultivated people. Her juvenile stories have been repeatedly published, and widely read. We scarcely need mention the Carey sisters (Alice and Phœbe), so much in print 30 years ago, mainly in verses of the quiet domestic kind; or Caroline Cheesbro's *Dreamland by Daylight* and *Little Cross-Bearers*; or Mrs. Eliza W. Farnham's philanthropic writings. Mary L. Booth, editor of *Harper's Bazar*, has won deserved fame as a historical writer; Louisa Chandler Moulton as sketch writer, critic, and correspondent; Mrs. Julia C. R. Dorr for novels and poems; Mary Clemmer for sketches of life in Washington, and *Outlines of Men, Women, and Things*; Margaret T. Preston for poems; Helen Fiske Hunt ("H. H.") for excellent verse, *Bits of Travel*, *Bits of Talk about Home Matters*, and magazine articles; Elizabeth Akers Allen ("Florence Percy") for *Rock me to Sleep*, *Mother*, and other poems of wide popularity; Louisa May Alcott for *Hospital Sketches*, novels, stories for children, and sketches of travel; Harriet Prescott Spofford for novelettes and stories; Sarah M. B. Piatt for poetry; Mary Virginia Terhune ("Marion Harland") for a long list of novels; Elizabeth Stuart Phelps for *The Gates Ajar*, *The Silent Partner*, and many short stories; and Celia Thaxter for poems. Of sketch writers for literary journals no one has surpassed Sarah Payson Willis, wife of James Parton, sister of N. P. Willis ("Fanny Fern"), whose sensible and often caustic short articles in the *New York Ledger* were deservedly famous. Mary Abigail Dodge ("Gail Hamilton") has employed a pungent pen in many articles on political and social subjects for magazines and journals, and in volumes of sketches and essays. This list of women authors might be greatly enlarged, but names enough are given to show that the sex contributes its full share to the instruction and gratification of the reading public.

In considering American literature the newspapers must not be overlooked. In no other country have the daily or weekly journals anything like so broad a field and so great an influence. It is quite probable that there are to-day published in the United States as many daily and weekly newspapers as in all the world besides, and quite as probable that their circulation among less than 50,000,000 of the Americans is twice as great as that of all the others among the 28 times as many people who constitute the population of the rest of the world. In 1835, the daily and weekly newspapers in the

United States numbered 1258; in 1840, 1404; in 1850, 2032; in 1860, 3543; in 1870, 4869; in 1879, 7478. The whole number of serials, daily, tri-weekly, semi-weekly, bi-weekly, semi-monthly, monthly, bi-monthly, and quarterly, in 1879, was 8579, an increase in 9 years of 2708, or nearly 50 per cent. The aggregate issues of these prints for one year are about 2,500,000,000 copies, enough to furnish an average of three papers or magazines each week to every family in the country. In this country, people read newspapers, whether they read anything else or not. In boats, stages, cars, at rest, at lunch, everywhere except in actual-business, or in church, or asleep, one sees the inevitable newspaper among all classes, from the shop-girl with her single weekly story-paper, to the merchant with all the daily journals within his reach. Such universal reading cannot fail to have a powerful effect upon the literary taste and character of the people, for it must be understood that the newspapers contain not only the news, but fill a large portion of their space with essays, tales, poems, discussions, and information, aside from the mere transactions of the day. Then, too, the American press is notably personal, and readers look to see what this or that editor, rather than this or that journal, has to say; and the peculiar style of a popular editor is often distinctly impressed upon his readers. In the field of politics the editor of a well-established journal is generally a power, often almost an autocrat; and quite naturally a similar power attaches to eminent editors in other fields. Again, a large proportion of eminent editors have been book-makers also, and as many book-makers have reached the dignity of authors through earlier efforts in the newspapers. William Cullen Bryant was both editor and author all his life; so was Benjamin Franklin for the most of his early life; the Warrens, Adamses, and Quineys of the revolution wrote for the press; so did James Otis, Alexander Hamilton, Burr, the Clintons, and a throng of statesmen. Freneau, the poet, was an editor; Noah Webster was an editor; so was Henry Wheaton, who was succeeded by Mordecai M. Noah. The names of Horace Greeley, Henry J. Raymond, William L. Stone, William Leggett, Francis P. Blair, Thurlow Weed, James Watson Webb, George D. Prentice, George W. Kendall, Duff Green, Hezekiah Niles, Henry B. Anthony, John G. Whittier, John C. Rives, Samuel Bowles, Joseph R. Hawley, Henry Ward Beecher, Sidney E. Morse, George W. Childs, Joseph R. Chandler, George P. Morris, Nathaniel P. Willis, Edwin Crosswell, Matthew L. Davis, William Colman, Theodore Dwight, Edward Everett, Joseph Gales, William Lloyd Garrison, Charles G. Green, Richard Hildreth, Amos Kendall, Charles King, John Neal, James K. Paulding, John Howard Payne, William C. Prime, R. Barnwell Rhett, George Ripley, George Willam Curtis, Bayard Taylor, Henry B. Stanton, Thomas Ritchie, Epes Sargent, Isaiah Thomas, Gulian C. Verplanck, Robert Walsh, Robert C. Winthrop, William Wirt, and many others, dead and living, belong alike to literature and journalism. Many of the most famous authors in the country first felt their way, like Washington Irving, in the newspapers of their time. The intimate connection between journalism and authorship is manifest, and the great influence of the newspapers not only in informing the people but in molding their habits of thought and expression is equally clear. And in late years the character of newspaper writing has been greatly elevated. The press now demands and secures the best talent, and the editorial portion of some daily newspapers approaches in careful writing the pages of Hume and Macaulay.

A glance over the field shows that there was little of pronounced American literature until near the time of the war for independence. What we had was mostly religious disputation. The stamp act aroused the people and filled the land with political literature, some of it of excellent quality; but there was little else until long after the revolution. It should be remembered that the conditions of a new country are never favorable to literary culture. The man who has to clear away the forests, build his cabin, and plant and gather crops, knows little of the "groves of Academe." It is not a little to the credit of Americans that within the first century of the hard, practical work of subduing a wild country, they have found or made leisure to do anything in the way of high literature. Now a literary class is taking its place as one of the institutions of our social life. Science, art, the profoundest philosophy, the most careful linguistic criticism and study, already challenge for America an equal place with the foremost nations of Europe.

AMERICAN MUSEUM OF NATURAL HISTORY, incorporated by the legislature of New York in 1869, open free, situated near the Central Park, New York. This institution was begun by private citizens, but is public in its nature, and is constantly receiving donations from private sources and from officers of the government. In 1874, a building was begun which when completed will surround a plot of 18½ acres. The portion finished is four stories high, with exhibition halls 170 by 60 ft. Among its attractions are collections of shells, skeletons of rare animals, building stone from Japan, woods from Bermuda, skeletons of man and other animals, a great variety of living mammals, birds alive and dead, archaeological relics from the Pacific islands, war instruments from savage nations, models of cliff dwellings of Colorado, pottery of the mound-builders, implements from the lake dwellings of Switzerland, stone implements from the valley of the Somme, skeletons of extinct gigantic birds. Geology is largely represented. The A. M. is under private management, and is rapidly growing in extent and importance. See **ARCHÆOLOGY**.

AMERICAN RIVER, in n. central California; its n. and s. fork are in the w. part of Eldorado county. It flows s.w. and joins the Sacramento a little above Sacramento city.

AMERICAN WINES are now an important and rapidly increasing product. When the Northmen from Iceland and Greenland visited the coast of Massachusetts and Rhode Island, between 995 and 1000 A.D., one of their sailors was a German, named Tyrker. One day he came from a stroll in the woods in a state apparently of intoxication, muttering incoherently in his native tongue. He had discovered wild grapes, a fruit unknown to the Icelanders, and had made a temporary wine-press of himself by eating them to his fill. We hear no more of grapes in America (for the colony of Northmen did not become permanent) until the middle of the 16th c., when wine was made in Florida from the wild grapes still so abundant there. Grape-growing was tried by the early English settlers in Virginia, but did not continue as a business. Thirty years later, however, wine was made there, and special rewards were offered to sustain the business. The first English governor of New York in 1664 granted to one Richards, a wealthy citizen, the privilege of selling native wines without tax, and he undertook grape culture upon an extended scale. About the same period wine was made in Delaware, and its production was tried but failed under the auspices of William Penn, though it succeeded in New Jersey. The early French settlers in Illinois made wine in considerable quantity before the close of the 18th c.; and the Harmonists, who settled in Pennsylvania in 1803, being Germans, naturally went into the business, taking it with them to Indiana. There is hardly a state of the union out of New England in which grape-growing has not been tried with success. The wine was brought to southern California by the early Jesuit missionaries, who planted cuttings at first, but as these did not fulfill their expectations, they tried the seeds found in raisins, and from these came the abundant and prolific Los Angeles grape, the only kind raised in California until about 1820. This, with a variety supposed to have come from Madeira, is known as the "California grape," and makes nearly two thirds of the grape crop of the state. Within the past dozen years nearly 200 different grapes have been tried in California, and most of them have done well. There are now some very large vineyards, including from 100 to 450 acres, and from hundreds to hundreds of thousands of vines. Some of the varieties largely cultivated are the Catawba, Concord, Delaware, Diana, Isabella, and Ives; and of foreign origin, the Black Hamburg, Chasselas, Muscatel, and Tokay. White, red, and sparkling wines are produced in California. Hock is fine and strong and much in demand; port is dark, sweet, and strong; sherry, muscatel, and Madeira are made, but not largely. The sparkling wines are good, but not equal to those of Europe. The process of wine making in one of the largest of the California vineyards is as follows: About Sept. 1, the pickers, each with a basket, begin work, followed by a wagon to receive their gatherings, which is furnished with boxes each holding 90 lbs. of grapes. When loaded with a ton and a half of fruit the wagon is drawn to the press. The grapes are first cast into a sieve with meshes about three quarters of an inch square. This sieve is the "stemmer," and as workmen with wooden hoes draw the bunches to and fro, the berries drop through the meshes, and the stems are left in the sieve. From the stemmer the berries drop into the hopper just below, at the bottom of which are two rollers, separated from each other about three sixteenths of an inch, one about four inches more in diameter than the other. As the rollers rotate at the same speed as to their axes, and one has the greater diameter, it follows that the rate of speed at the circumference is different. This results in the rubbing of the skin of the grape sufficiently to thoroughly break it, and, to a certain extent, mash the pulp. Immediately below the rollers is a receiver, a long wooden box with a false bottom, and into this the broken berries fall. A large part of the juice drains from them and is pumped into vats to ferment for the purpose of making white wine. Remaining in the receiver is a mass of pomace. If red wine, such as claret or burgundy, is desired, this pomace is placed in vats. If white wine only be wanted, then it is taken at once to the press and all the juice in it extracted. The press presents a remarkable appearance. Imagine a beam 56 feet long, 12 inches thick, and 14 inches high, with one end having an iron rod run through and the other fastened to a rope running over a pulley. The frame which holds down the beam is built of the strongest oak timber and firmly anchored in the earth. About three feet in front of it stands the press itself, a movable box made with clasps so that it can be opened at will, and standing on a bed rather larger than itself. The pulp arrives to be pressed, the beam is raised by the tackle, and the pulp is placed in the box, which is about 3½ ft. square, and 3 ft. high. After the box has been filled, boards which exactly fix the box are placed on top of the pulp. Across them others are placed, and again and again is this done until there are four tiers of wood, each tier crossing the one below it. Then the long beam is let down, slowly at first, but with constantly increasing pressure. The first thing to be done with the juice is to bring it to fermentation. For red wine the pomace is not pressed as it comes from the receiver, but is placed in a large vat, filling the vat about four fifths full. On top is placed a cover, held in place by four screws, and pierced with a great many little holes. On the second day the fermentation begins, and the wine commences to rise through the holes and swell up in the vat. The pomace being kept down by the cover, and being cov-

ered with wine, cannot come in contact with the air; if it did it would sour and spoil the wine. At the end of six or seven days the fermentation subsides, and the wine is drawn, or "racked," off into casks, which are kept full all the time. A second fermentation then takes place, which continues for three or four weeks, during which time the bung-holes of the casks are kept partly open, to allow the gases to escape; then the wine is ready for storage. The lees that remain after the wine is racked off are gathered and allowed to settle once more, and the second drawing is used to give body to light wines, or distilled into brandy. The process of making white wine differs from the former in only the preliminaries. The juice which runs from the grapes at first and that which is expressed from the new pomace is pumped into casks to ferment. The fermentation begins in about two days' time, and continues about six or seven days; during that period it discharges through the bung-hole of the cask a thick, greenish-yellow matter of the consistency of molasses. This is the vegetable matter remaining in the wine, and it has to be cleaned off twice a day. The casks, too, are kept filled with new wine all the time, in order to prevent any of the vegetable matter souring. Fermentation having ceased, the after operations are the same for both red and white. After the wine has lain in casks four or five months, it is once more racked off into fresh casks, and the sediment, amounting to about ten per cent., left behind. This is all thrown together and allowed to settle again. During the first year this racking takes place three times. A curious thing is that during the first year, about the time when the vines begin to throw out their branches, the wine undergoes what is called the after fermentation, and changes itself for the last time. During the second year the wine is racked twice, and during the third once. It is then fit for market.

The grapes used in the manufacture of California sherry consist of two varieties, the Bogota and Mission, equal quantities of each being placed in the press. They are allowed to hang upon the vine until about the middle of Nov., when they become dead-ripe and slightly shriveled. They are picked about two hours after sunrise, when thoroughly dry, and are taken to the press. The juice which flows from the machine is very sweet, and runs into vats placed in the warmest part of the cellar. Here fermentation takes place as with other wines; but in order to prolong this process as much as possible the juice is stirred three or four times a day. The result of this agitation is to produce a strong, rich, sweet, and heady wine, which is the foundation of future sherry. After five or six months it is racked off into fresh casks, and these are taken to a hot-house, the roof of which is made of glass, where they are placed upon frames of heavy scantling and exposed to the heat of the sun. The house is kept at a heat from 130° to 140° F., and in this temperature the wine remains for six or eight months. During the time, the casks are rolled over three or four times every week. This continued exposure to the influence of heat develops in the wine that dry flavor so much admired by connoisseurs of sherry; it also loses no small part of its strength. The wine, when it first comes from the vats in which it is fermented, is one third as strong as brandy, but after it has been exposed for such a length of time to the action of the sun, part of the alcohol has evaporated and the wine becomes fit for table use. From the hot-house the wine is taken back to the cellar, where it is kept for six or seven months more at a temperature of about 65°, during which time it often happens that a second and milder fermentation takes place. If the wine is intended to be cheap sherry, it is then ready for market. If it is intended to be a finer and more expensive grade of wine, during the following summer it is again placed in the hot-house, and subjected to the heat of the sun, for the oftener this process of heating and moving the wine is performed—within certain limits—the finer and better does it become, and the higher is the flavor developed.

Another process of manufacturing sherry is much more rapid than that described, although the result may not be so satisfactory to a lover of wine. It is called the Scarle process, and is patented. In it the vats containing the wine are connected with pipes and have coils of pipe in them. Through these, steam is forced, and produces the necessary heating of the wine and expulsion of the alcohol. By this process the sherry is ripened much sooner than in any other way.

The wines of the Atlantic states are in great variety, though not very abundant. Nicholas Longworth is remembered as the most active promoter of the manufacture of Catawba wine, which is now widely extended. His vineyard was near Cincinnati, and there are still extensive grape-growers in Ohio and the states westward. This grape grows well around lake Erie, and makes a light-colored wine that is highly appreciated. Sherry of fine quality is made from the Cunningham and Hermann grapes. Some grapes, such as the Scuppermong, do not thrive in the north, but are largely grown in the southern states. At the present time the production of native wines is probably nearly 30,000,000 gallons per year, of which about one third is from California; and the business is advancing rapidly.

AMERICUS, the co. seat of Sumter co., Ga.; 70 m. s. s. w. of Macon, on the Southwestern railroad. It has several churches, and a college for women. Pop. '70, 3259.

AMES, EDWARD R., D.D.: 1806-1879; bishop of the Methodist Episcopal church. In 1826 he entered Ohio university. In 1828 he opened a high school at Lebanon, Ill., the germ of McKendree college; in 1830 he became an itinerant preacher of the Indiana conference; he was a delegate to the general conference in 1840, and afterwards correspond-

ing secretary of the missionary society for the south and west. From 1844 to 1852 he was presiding elder of the Indiana conference, and was elected bishop in 1852. He was the first Methodist bishop to visit the Pacific coast. During the war he served on important commissions for the exchange of prisoners and other work.

AMES, FISHER; 1758-1808; b. Mass.; son of Nathaniel Ames; graduated at Harvard in 1774. He practiced law, and went into politics. In 1788 he bore a distinguished part in the Massachusetts convention to ratify the federal constitution, pleading with rare eloquence for the adoption of the new organic law. His first political ventures were in essays in the newspapers signed "Camillus" and "Brutus," and, when the authorship became known, it gave him a place among the most prominent federalists. When the new government went into operation he was the first representative in congress for the district including Boston, and he served through Washington's administration, taking high rank among the orators of the time. After leaving congress he took no prominent part in politics, though his pen was frequently employed. He pronounced the eulogy on Washington before the Massachusetts legislature. He spent his last years of failing health in retirement. He always had gloomy forebodings of the destiny of his country, as, in common with many federalists of his time, he doubted the permanent vitality of a republican form of government. His orations, essays, letters, etc., have been published by his son. He was attractive in appearance, gentle in manners, and the coruscations of his wit and imagination were incessant.

AMES, JOSEPH, 1825-72; b. N. H.; an American portrait painter, working many years in Boston, where he made portraits of Daniel Webster, Pius IX., Rachel, Rufus Choate, and others. His *Death of Webster* is well known.

AMES, WILLIAM, D.D., 1576-1633; an English independent theologian, fellow of Christ college, Cambridge; he left England during the reign of James I. to avoid expulsion, became minister of the English church at the Hague, and afterwards occupied the divinity chair in Frankener university. He was at Rotterdam, expecting to sail for America, when his death occurred. He left many important theological works.

AMESBURY, a t. in Essex co., Mass., 40 m. n. of Boston; pop. '70, 5581. There are in the town half a dozen woolen mills, nearly 20 carriage factories, a national bank, and a savings-bank. A. is the home of the Quaker poet John G. Whittier.

AMGA', a river of Siberia, rising in the Yablonnoy mountains, running n.n.e. about 460 m. and joining the Aldan, one of the tributaries of the Lena. At Amginsk its breadth is 3000 ft.

AMHARIC LANGUAGE, named from the important province of Amhara; the principal tongue of Abyssinia; with some variations of dialect, used throughout the kingdom. It is of ancient Semitic stock, and relates to the old Ethiopian or Gees, which it superseded early in the 14th century. Its alphabet is the Ethiopic with some added letters; and like that language, it strongly resembles the Arabic, though with the mixture of many African words. Little is known of the A. L. in literature, though the Bible has been printed in it.

AMHERST, a co. in w. central Virginia, between the James river and the Blue ridge; 418 sq. m.; pop. '80, 18,768-6704 colored. It has charming scenery and fertile soil; the chief products are wheat, corn, oats, tobacco, and butter. The Virginia and Tennessee railroad intersects it. Co. seat, Amherst Court House.

AMHERST, a t. in Hampshire co., Mass., 82 m. w. of Boston on a branch of the Connecticut river; pop. '70, 4035. It has six or eight churches, four paper-mills, various factories, and a weekly newspaper. The scenery is picturesque, with beautiful views of the Holyoke range and other mountains. The seat of the Massachusetts agricultural college, with its large greenhouses and the Durfee plant-house, probably the most successful agricultural school in the country. Amherst college, founded here in 1821, is one of the leading institutions of the country. (See AMHERST COLLEGE and MASSACHUSETTS AGRICULTURAL COLLEGE.)

AMHERST, JEFFERY, Baron, 1717-97; a British general; present at Fontenoy on the staff of gen. Ligonier, and sent to America in 1758 with the rank of major-general. With Wolfe and Prideaux he conquered all the strongholds of the French in Canada, for which he was thanked by the House of Commons, and granted the order of K.B. Soon afterwards he was made commander-in-chief of the English forces in America; in 1763 he was appointed governor of Virginia, and in 1770 governor of the islands of Guernsey. In 1772-82 and 1793-95 he was commander-in-chief of the British armies, but, being superseded by the duke of York, he was made a field-marshal. In 1776, he was made a peer as baron Amherst of Holmesdale, and in 1787 was patented baron Amherst of Montreal.

AMHERST, WILLIAM PITT, Earl of, 1773-1857. In 1816, he was sent ambassador to China where he refused to perform what he thought a degrading act of kneeling, called *ko-tou*, which was required of all who would see the emperor. For this he was not allowed to enter Peking, and the object of his mission was frustrated. On the way home he was wrecked. Another ship in which he returned to England touched at St. Helena,

where he had several interviews with Napoleon. He was governor-general of India, 1823-28, and was created earl in 1826.

AMHERST COLLEGE, in Amherst, Hampshire co., Mass., was founded, 1821, by Congregationalists. Its declared object was, *pro Christo et ecclesia*, the education of young men for ministerial and missionary labor. It holds funds which amount to nearly \$100,000, whose income is distributed among indigent students who have the ministry in view. Its 12 college buildings have cost \$300,000. Its laboratories, museums of science, archaeology, and art, and its library, contain collections valued at about \$150,000. The entire property under its control is about \$1,100,000, and its annual income from funds and fees is about \$65,000. To its funds the state contributed \$50,000; the remainder has come from private munificence. The largest donations were \$250,000 by William J. Walker; \$175,000 by Samuel A. Hitchcock, and \$150,000 by Samuel Williston. The college church, a beautiful gothic edifice, was the gift of William A. Stearns, Jr., son of the late president. The library has 41,000 volumes. The notable collections are: the Hitchcock collection of ichnology; the Shepard collection of minerals and a remarkably full collection of meteorites; the Woods collection of geology; the Adams collection of conchology; the collection of physical apparatus, much of it the work of professor E. S. Snell, during more than 50 years of continuous labor; the gallery of fine art; the Nineveh gallery; the museum of Indian relics. The Barrett gymnasium, as managed, is a feature peculiar to the institution. All students join in its exercises, under the professional direction of the professor of hygiene and physical culture. The faculty numbers 25 persons; there are 350 undergraduates, and 2546 alumni. The presidents have been, Zephania Swift Moore, D.D., 1821-23; Heman Humphrey, D.D., 1823-45; Edward Hitchcock, D.D., LL.D., 1845-54; William A. Stearns, D.D., LL.D., 1854-76; Julius H. Seelye, D.D., LL.D., 1876, the present incumbent.

AMICE, or AMICT, a vestment in the Roman Catholic service worn during mass. It is a square linen cloth laid over the neck and shoulders, originally a protection for the throat, but adopted as an emblem of the cloth wherewith the Saviour was blindfolded before his crucifixion. In ancient Rome, the A. was an upper garment worn over the tunic.

AMICI, GIOVANNI BATTISTA, 1784-1863; celebrated as an improver and maker of astronomical instruments. He was the first to make elliptical specula to prevent spherical aberration. He is well known for microscopes with compound achromatic object glasses. After being professor of mathematics in Modena, he was, in 1831, appointed inspector-general of the studies of the duchy, and, a few years later, had charge of the observatory at Florence, where he lectured on mathematics in the museum of natural history.

AMIDAS, PHILIP, 1550-1618; an English explorer. He commanded one of the two ships sent by queen Elizabeth under Arthur Barlow to N. America, coasting up from Florida, and July 13, 1584, entering Ocracoke inlet, North Carolina, of which country he gave a most favorable description. The queen called the new land "Virginia." Amidas was long afterwards in the English marine service.

AMIOT, or AMYOT, JOSEPH, 1718-94: a Jesuit missionary in China who resided in Peking 44 years; spending the time in the study of the Chinese and Tartar literature, and doing more than all men before had done to acquaint Europe with the knowledge and thought of the Mongolians. Many of his statements were erroneous, but his *Tatar-Mantchou-French Dictionary* was a valuable work. He also wrote a full, and, in the main, an accurate *Life of Confucius*, and many essays on Chinese history and science.

AMITE, a co. in s.w. Mississippi, named from Amite river, flowing through it: pop. '80, 12,791-6777 colored. It formerly had 700 sq.m., but has been reduced to form the co. of Lincoln. Its surface is uneven; soil fertile; corn, sweet potatoes, rice, and cotton are produced. Co. seat, Liberty.

AMMAN, or AMMON, ancient Rabbah, the chief t. of the Ammonites; a ruined city of Syria, in the pashalic of Damascus, 55 m. n.e. of Jerusalem, on a branch of the Jordan. It was captured by king David; afterwards ruined, but rebuilt by Ptolemy Philadelphus and named Philadelphia. As late as 300 A.D., it was prosperous, and had temples and a fine theater. The ancient ruins are extensive.

AMMAN, JOHANN CONRAD, 1669-1730; a Swiss physician, and one of the earliest writers on the instruction of the deaf and dumb. He graduated at Basel, but fled to Amsterdam on account of his religious views. In his work *Surdus Loquens*, which Haller calls *vere aureum*, he describes the process employed by him in teaching, which was principally by fixing the attention of the pupils on the motions of his lips and larynx while he spoke, and inducing them to imitate until they could utter distinct letters and words.

AMMAN, Jost, 1539-91; a Swiss artist of singular productiveness, many of whose works are in the Berlin collection of engravings. He began a series of copperplate portraits of the kings of France, and made many wood-cuts for the Bible. His drawing is correct and spirited, and his costumes are minutely accurate.

AMMEN, DANIEL, b. Ohio, 1820; a rear-admiral. He passed through all grades in the U. S. navy to that of commodore in 1872. He commanded the gunboat *Seneca*, bore a conspicuous part in the battle of Port Royal, Nov. 7, 1861, and was engaged in all the operations of admiral Dupont on the s. Atlantic coast; he was in the attack of the iron-clads on fort Sumter April 7, 1863; was in both attacks on fort Fisher, and was recommended for promotion by rear-admiral Porter. His more recent duty has been as chief of the bureau of navigation.

AMMERGAU MYSTERY. See OBER-AMMERGAU, *ante*.

AMMIRATO, SCRIPPO, 1531-1601; an Italian historian. He entered the church, and was in the service of Pius IV., at the suggestion of duke Cosmo I. He wrote a *History of Florence*, histories of great families in Naples and Florence, and discourses upon Tacitus.

AMMONOOSUC, UPPER, and LOWER; small tributaries of the Connecticut river in New Hampshire; the former entirely in Coos co., the latter rising in that co. and running through Grafton, emptying opposite Wells river, Vt. Length, 100 miles. A branch is called the Wild A.

AM'NESTY (*ante*). In the absence of specific statutes on the subject, the exercise of A. in the United States was assumed to lie with the president. Washington, without participation by congress, granted A., or pardon, to persons who took part in the "whisky rebellion." John Adams proclaimed full pardon of those engaged in the house-tax insurrection, and Madison did the same in the case of the Baratania pirates. During the rebellion, Lincoln and Johnson issued four or five proclamations of A., one of the latest being so broad in its conditions that it raised in congress the question whether the president had the right to such action, and the judiciary committee of the senate, in Feb. 1869, decided that he had not. "A." is so closely connected with "pardon," and "reprieve" that it is difficult to distinguish them. In one message president Lincoln asserted his exclusive authority under the constitution, and his independence of congress in respect to the pardoning power, even more emphatically than in the proclamation. In 1832, congress had passed an act giving full power to the president, but he considered the act unnecessary, claiming that the constitution gave him the necessary authority. Then, in 1837, the act of 1832 was repealed; and all A. proceedings were remanded to their original basis in the second article of the constitution, until further defined in later amendments. The supreme court had decided in the case of Garland that for pardon the president's power was perfect; yet that is not held to include general amnesty. But in 1833 the fourteenth amendment to the constitution, prohibiting rebels from holding certain offices unless their disabilities should first "be removed by a vote of two thirds of each house," seemed to diminish the range of executive authority. Still, the supreme court has held in several cases to the absolute power of the president to grant amnesty and pardon, and that neither congress nor any authority less than an express change of the federal constitution can reverse, abridge, or direct that power. The court, through chief justice Chase, says: "It is the intention of the constitution that each of the great co-ordinate departments of the government, the legislative, the executive, and the judicial, shall be in its sphere independent of the others. To the executive alone is intrusted the power of pardon, and it is granted without limit. Pardon includes amnesty. It blots out the offense pardoned, and removes all its penal consequences."

AMCEBA DIFFLUENS, one of the lowest animal structures; a gelatinous mass, rounded in form, capable of emitting and retracting processes and lobes from all parts of the body. It abounds in fresh-water ponds, and is known as *proteus*. Except a small pulsating space, it seems to be a formless mass of *sarcode*.

AMONTONS, GUILLAUME, 1633-1705; a French philosopher. Illness in youth left him partially deaf, and he turned his attention to machinery and the discovery of perpetual motion, going on to the invention and improvement of various mechanical appliances, among them a hydrometer which was highly approved by the Paris academy of sciences, of which he afterwards became a member. In France, A. is considered the inventor of the telegraph; and, almost at the same time with Halley in England, he found that the boiling point of water varies with the elevation.

AMORETTI, CARLO, 1741-1816; an Italian author. He joined the order of St. Augustine, and was professor of common law in the university of Parma. In 1772, he entered the ranks of the secular clergy. He was curator of the Ambrosian library in Milan, 1797, and the first to give the world knowledge of its treasures, from which he published a collection of voyages. He wrote a life of Leonardo da Vinci, and treatises on natural science, familiarizing Italians with the scientific status of other nations.

AMORETTI, MARIA PELLEGRINA, 1756-87; niece of Carlo A. At the age of 16 she argued in public on scientific topics, and afterwards studied law, graduating from the university of Pavia. She wrote a treatise on Roman law.

AMOS, BOOK OF, has a place among the writings of the prophets, undisputed by the Jews, and twice affirmed in the New Testament. It is not made up of detached predictions, but is logically and artistically connected in its several parts, and is evidently

the mature production of the single author whose name it bears. Nothing is certainly known concerning him besides what he relates of himself—that he was of Tekoa, in Judea, a herdman and cultivator of sycamore fruit, until the Lord called him away from these employments to prophesy unto Israel. Jerome, applying to him words which Paul used concerning himself, calls him “rude in speech, yet not in knowledge.” Some modern critics have adopted this view, but Bishop Lowth, with good reason, rejects it; thinking “that the shepherd seer is not at all inferior among the prophets. As in sublimity and magnificence he is almost equal to the greatest, so in splendor and elegance of diction he is scarcely below any.” A. prophesied during the reigns of Jeroboam II., king of Israel, and Uzziah, king of Judah, two years before the earthquake which Zachariah, 300 years afterwards, describes as having caused great alarm among the people. The prophecy of A. preceded Isaiah’s, to which, and to those of the prophets generally, it serves, in some degree, as an introduction, uttering briefly many predictions which they give more at length. Before his time Israel and Judah had been greatly oppressed by the surrounding nations; but having been relieved, they were then, like their neighbors, living in idolatry, luxury, avarice, and cruelty to the poor. Therefore A. was commanded to denounce judgments against them all. His prophecy has been compared to a thunder-storm, rolling over the surrounding kingdoms, touching Judah in its progress, pouring the fullness of its power on Israel, and passing away with a bright rainbow on its cloud. The book is accordingly divided into three parts. I. *Judgments against the neighboring nations.* (Chapters i. 3–15; ii. 1–3.) 1. *Syria*; the fulfillment of which, more than half a century after the prediction, is recorded (II. Kings, xvi. 9). 2. *Philistia*; fulfilled (II. Kings, xviii. 8) a century after. 3. *Tyre*; the fulfillment of which was commenced by Nebuchadnezzar, and continued at intervals, until comparatively modern times. 4. *Edom*; the fulfillment of which, in a great measure delayed until the Mohammedan invasion, was soon after that complete. 5. *Ammon*; the destruction of whose great city, Rabbah, is especially foretold. This city, after it had experienced varied fortunes, the Moslems found in ruins, still remarkable, even in the east, for their extent and desolation. 6. *Moab*; of which the palaces of Kirioth are specified as doomed to be destroyed. Of this city, as one of many, modern travelers say, “The ruins are of great extent, with traces of many public buildings, broken columns, private dwellings having low roofs, colossal walls, and massive stone doors. Over these and all the surrounding plains desolation reigns supreme.” II. *Judgments against Judah and Israel.* (Chapters. ii. 4–ix. 10.) 1. *Judah* (ii. 4, 5); fulfilled, first, by Nebuchadnezzar, about 200 years after the prediction; and, finally, by the Romans, nearly 700 years later still. 2. *Israel* (ii. 6–ix. 10); (1) General reproof for their aggravated sins against God, ii. 6–16. (2) Judgments denounced and the causes of them declared, iii. (3) Remonstrance, five times repeated, against their disregard of former visitations, iv. (4) Lamentation over their approaching ruin, with an earnest exhortation, five times repeated, to seek the Lord that they might even yet be saved, v. 1–24. (5) In view of their continued transgression, notwithstanding the divine forbearance and care, their captivity and inevitable destruction are declared, with the exception, explicitly pledged, that the judgments shall have an end, 5, 25–ix. 10. III. *The coming of the Messiah is promised, with the admission of the Gentiles to his kingdom, and the final restoration of Israel,* ix. 11–15.

AMOSKEAG', village. See MANCHESTER, N. H., *ante*.

AMPELOP'SIS, a genus of vine-like woody plants; including Virginia creeper, or American woodbine. It is better adapted than ivy to our climate, and more rapid in growth. In autumn the dying leaves are of most brilliant red and yellow. Order, *vitaceæ*.

AMPHIARA'US, a legendary son of Oicles and Hypermnestra, known as a prophet, and famed for valor in the Argonautic expedition and the Calydonian hunt, especially renowned in the war of the Seven against Thebes, into which he was forced by the treachery of his wife, a sister of Adrastus, the king of Sicyon who planned the war to restore Polynices to the Theban throne. A. lost his life; but he was deified, and believed to give oracles. Festivals were made in his honor. The ruins of a temple to A. still exist in the ancient Oropia.

AMPHILOCHUS, in legend, a son of Amphiaras and brother of Alcmaeon; one of the Epigoni in the Seven against Thebes. He was in the Trojan war, and was one of Helen's suitors. With Mopsus he founded Mallus, and when Mopsus refused him a share in the government, the two fought, killing each other. A. was believed to have prophetic power, and had an oracle at Mallus and an altar at Athens, where, with his father, he was worshiped. There are two other mythological persons of the name, one A.'s grandson, the other a son of Dryas.

AMPHION, in mythology, son of Zeus and Antiope, twin brother of Zethus. Both when infants were abandoned on a mountain, but were found and brought up by shepherds. Apollo gave A. a lyre, and he became a singer and musician, his brother being a shepherd and hunter. To avenge their mother's wrongs they captured Thebes, and fortified it by the power of the lyre, to whose music stones moved and fitted into place. A. married Niobe, who bore him many sons and daughters, but all were killed by Apollo.

A. killed himself from grief, or was slain by Apollo, for assaulting his temple, and buried with his brother at Thebes. The punishment inflicted by A. upon Dirce for her treatment of his mother (tying her to the tail of a bull and dragging her until she died) is represented in one of the finest works of ancient art—*The Farnese Bull* by Apollonius and Taunicius, found in 1546, and now in the Farnese palace at Rome. There are four other mythical personages named A.

AMPHIOX'US. See LANCELET, *ante*.

AMPHISBÆ'NA, a genus of *lacertilia*, or lizards, of the general appearance of snakes, or worms, found only in the West Indies and South America. The best known is the soty or dusky species. The body is 18 to 24 in. long, and nearly the same thickness throughout; head small, tail very short. It lives under-ground, feeding on ants and other small insects. As it moves either way with equal ease, rumor gave it two heads, and asserted that when cut in twain the parts would find each other and reunite. Its dried and pulverized flesh was supposed to possess miraculous curative properties.

AMPHITRYON, legendary son of Alcæus and Hipponome. He accidentally killed his uncle Electryon, for which he was expelled from Mycenæ and took refuge in Thebes. There he won the hand of Alemena, and by her was father of Iphicles. He was killed in a war of Hercules against Erginus. His tomb was extant in Thebes in the days of Pausanias.

AMRÁOTÍ, a district and city in India. The district has an area of 2566 sq.m., pop. '67, 407,276. It is a plain, about 800 ft. above tide, broken only by a line of hills 400 or 500 ft. higher. There are four considerable towns: the city of A., pop. 23,410; Karinja, 11,750; Badnera, on the great Indian peninsular railway which crosses the district, 6676; and Kolapur, 6169.

AMRU'-BEN-EL-ASS, or AMER, d. 663 A.D., one of Mohammed's disciples, but before conversion a furious opponent. Like Saul, his change made his zeal greater on the other side, and chiefly to him were the prophet's successors indebted for the conquest of Syria. In 639 he led 4000 men into Egypt, besieged ancient Memphis, took it by storm, and on the spot built Fostat, the ruins of which are now known as old Cairo. In 640, after a siege of 14 months, he took Alexandria, losing 23,000 men. He is credited with projecting a canal to unite the Mediterranean and Red seas. He is charged with causing the destruction of the famous library at Alexandria, but the charge may well be dismissed, as it was not advanced until six centuries after his death. There is reason to believe that no large proportion of the 700,000 volumes left by the Ptolemies remained at the date of A.'s conquest.

AMRU'-EL-KAIS, or AMROULCAYS, an Arabian poet, contemporary with and opposed to Mohammed. Before the prophet announced his mission, A. wrote one of the seven poems called "Moallakat" (suspended) because they were suspended in the Kaaba at Mecca. They were put in English by Sir William Jones.

AMSDORF, NIKOLAUS VON, 1483-1565; a German Protestant reformer, an early and determined supporter of Luther; educated at Leipsic and first graduate of the new university at Wittenberg; professor of theology in 1511. He was with Luther at the Leipsic conference and the diet of Worms, and in the secret of his Wartburg seclusion. He assisted the first efforts at reformation in Magdeburg, Goslar, and Einbeck. He was active in the Schmalkald debates, and spoke strongly against the bigamy of the elector of Hesse. A. was made a bishop of Naumburg in 1542; resigned in 1547, and took part in founding the university of Jena. He superintended the publication of Luther's works, and opposed Melancthon on the separation of the High-Lutheran party.

AMSTERDAM, a t. in Montgomery co., N. Y., 33 m. n.w. of Albany, on the Mohawk river and the N. Y. Central Railroad. There are six churches, a score of factories, banks, and two weekly newspapers. Pop. '75, 9045.

AMU, AMU DARIA, or JEHUN. See OXUS, *ante*.

AMUCK', or AMOOK, RUNNING (Javanese, *amook*, "to kill"), a custom in Java among those in whom a ferocious madness is produced by long use of opium. The sufferer rushes abroad armed with some weapon, usually a creese, or large dirk, striking indiscriminately at all whom he encounters. When one is seen to start on his madness, the people cry "amook," and immediately hunt the maniac to death. Probably in many cases this is deliberate on the victim's part, as a means of suicide. This madness is known only by the Javanese.

AMURATH', or MURAD', I., 1326-89; Sultan of the Ottoman Turks, succeeding his father Orkhan in 1360. He was the first to lead Turkish arms into Europe, and in 1361 took Adrianople, fixed there his residence, built a splendid mosque, and further adorned the city. Urban V. preached a crusade against him, but the venture was disastrous to the Christians. The Greek emperor John Paleologus was his ally; but the son of the Greek and one of A.'s sons made a conspiracy, which was defeated and young Amurath was put to death by his father. A. was a good soldier but illiterate, signing treaties by dipping his hand in ink and making a mark with three fingers together, with

the fourth finger and thumb at distant places. He lost his life in the battle of Cassova, and was succeeded by his son Bajazet.

AMURATH', or MURAD', II., 1404-51; tenth emperor of the Turks, succeeding Mohammed I. in 1422. He took Salonika (Thessalonica) from the Venetians and opened the way for subjugating Greece. He went on successfully till 1442, when he was defeated by Hunnaides and obliged to make peace with the Christians. At that time he lost a son, and abdicated in favor of another son, Mohammed, only 14 years of age. The Christians renewed the war, and hastening from retirement he defeated them in the important battle of Varna, Nov. 10, 1444, where Ladislas, king of Hungary, fell. He again retired, and again came forth to quell an insurrection of the janissaries. He invaded Albania and the Peloponnesus, where George Castriot (Scanderbeg) defeated him; but he retreated only to gain a great victory over his former adversary Hunniades, at Cassova, Oct. 17, 1448, in a battle lasting three days. He was the first Ottoman emperor who caused bridges of great length to be built; and in his reign poetry, jurisprudence, and theology began to flourish. He died of apoplexy at Adrianople.

AMURATH', or MURAD', III., 1545-95; succeeded his father, Selim II., in 1574 as sultan of the Turks. It is said that his first words to his courtiers at accession were, "I am hungry; give me something to eat," and they were prophetic of the famines and disasters of his reign. In 1579, queen Elizabeth gained his friendship, and made with him a commercial treaty. In his reign the janissaries began to know their power, and to hasten the ruin of the state by revolts. He was superstitious, feeble, irritable, fond of dancing, music, and the pleasures of the harem.

AMURATH', or MURAD', IV., 1611-40; succeeded his uncle Mustapha in 1623. The chief event of his reign was the recovery of Bagdad after 30 days' incessant assault upon the Persian defenders. His bloody character has given him the name of the Turkish Nero. On repossessing Bagdad he slew 30,000 Persians in cold blood. It is supposed that this ferocity and his early death at the age of 39 were due to perpetual intoxication.

AMUSSAT, JEAN ZULÉMA, 1796-1856; a French surgeon. He entered the army, was assistant surgeon under Esquirol in La Salpêtrière hospital, and prosecutor at the Paris faculty of medicine. He improved and invented many surgical instruments, and was the first to show the importance of torsion of arteries in hemorrhage. He wrote on the nervous system, lithotomy, etc.

AM'YLENE, a thin colorless liquid, boiling at 102° F., density of vapor 2.43; sp. gr. 0.65; discovered in 1844 by Balard. It is produced by treating amylic alcohol with sulphuric or phosphoric acid. It is very volatile, mixes with alcohol and ether, and burns with a white flame; combines actively with bromine, the hydracids, and chloride of sulphur. Its vapor is rapidly absorbed by sulphuric anhydride and perchloride of antimony. It has been used like chloroform as an anæsthetic, but with occasional fatal results.

AMYRAUT, MOÏSE, 1596-1664; an eminent French Protestant theologian and metaphysician, of an illustrious family from Alsace. His father set him to study law, and he made rapid progress in the university of Poitiers; but on his way home met at Saumur the Protestant minister, Bonchereau, who took him to Plessis-Mornay, governor of the city, and the two persuaded A. to leave law for theology. He dwelt at Saumur, and "sat at the feet of the great Cameron," a pupil as great as his master. His fame became such that universities and churches in Saumur, Paris, and Rome competed for his presence. A. referred all to the synod of Anjou, and its decision settled him at Saumur, both as professor and pastor. His co-professors were Louis Capell and Josua de la Place; and their life-long friendship was beautiful and remarkable, as is their memory as joint authors of the *Theses Salmuriensis*. In 1631, A. published *Traité des Religions*, still a living work; and thenceforward he was foremost in provincial and national synods. His character was largely shown when the Charrenton synod of 1661 chose him to present to the king the *Copy of the Complaints and Grievances for the Infractions and Violations of the Edict of Nantes*. Before this time all save Roman Catholic deputies had addressed the king on their knees; but A. refused to speak unless he could stand as did the Romanists. A warm debate ensued, and even Richelieu consented to visit privately the stout Protestant, and reason with him; but he insisted and carried the day; and, in presence of the sovereign, his rehearsal, given with suavity and dignity, charmed even his adversaries. His oration was at once published in the *Mercury*, and is a historic landmark in French Protestantism. He took part in all the great controversies on predestination, Arminianism, etc., of the time; holding fast to Calvinism, but with a liberality not usual in that severe sect. The university at Saumur became the fountain-head of French Protestantism, and A. had as many as 100 students in attendance upon his prelections. He left many works which are still the religious consolation of humble French homes. In 1657, he was hurt by a fall which perhaps hastened his death.

ANACLA'CHE, one of the mountains of Bolivia, in 18° 12' s., 69° 20' w.; about 4 m. high, always covered with snow.

ANACLE'TUS I., SAINT; second or third bishop of Rome, a martyr under Domitian. Others say that he succeeded Clement I. as fifth Roman bishop, and was martyred about 109 A.D.

ANACLETUS II., PETER DE LEON, anti-pope. He was chosen in 1130 by a faction of cardinals opposed to Innocent II., and was sustained by the Roman and some other states. He maintained himself at Rome against the arms of Lothaire, the opposition of other kings, and the clergy in general; d. 1138.

ANACONDA, *Eunectes murina*, a serpent of the boa family, native of tropical America. It passes most of its time in shallow lakes or streams, living chiefly on small rodents, iguanas, fish, and occasionally monkeys and ant-eaters, which it crushes and swallows. It is not venomous, and is handled without danger. The natives, who make shoes and bags of its skin, use its fat for oil, and its flesh for food. It is ovoviviparous; swims rapidly and can remain long under water. It is seldom more than 20 ft. long.

ANADYR', or ANADIR, a sea or large gulf of n.e. Asia, much resorted to by whalers. —ANADYR RIVER, in e. Siberia, flows 500 m. through rocky, barren, and snowy regions, and empties in the sea of A.

AN'ACHEIM, a t. in Los Angeles co., California, 12 m. from the ocean; the center of a great wine interest. In 1875, the California wine product was 8,000,000 gallons.

ANAL'CIME, CUBICITE, or SARCOLITE, a silicate of alumina and soda, usually occurring in 24-sided crystals, and sometimes in cubes with the eight solid angles replaced by the faces of an octahedron. It is found in the lake Superior copper region.

ANALEMMA, a name given to a projection of a sphere upon a plane. In this form of projection, called also *orthographic*, the plane of projection is that of a meridian, or one parallel thereto, and the point of sight is assumed at an infinite distance on a line normal to the plane of projection and passing through the center of the sphere. A circle which is parallel to the plane of projection is projected into an equal circle; a circle perpendicular to the plane of projection is projected into a right line equal in length to the diameter of the projected circle; a circle in any other position is projected into an ellipse, whose major axis equals the diameter of the projected circle. The term A. was also applied to an instrument of brass or wood, on which such a projection was accompanied by a horizon; it was used in finding the time of the rising or setting of the sun.

ANAM', or ANNAM' (*ante*). The treaty with France concluded at Saigon, March, 1874, secured to the emperor of A. independence of all foreign powers, especially of the emperors of China. For this protection the emperor of A. pledged himself to accommodate his policy to that of France, to annul the enactments affecting the Roman Catholic religion, to open several ports to foreign commerce, and to admit to those ports French consuls and a limited number of armed guards. This treaty opened the ports of Haiphong and Hanoi in 1875; and of Quinhon in 1876. Haiphong is a mere village on one of the mouths of the Songkoi, or Hongkiang (red river), at a point reached by vessels drawing about 14 ft. of water. Hanoi, also on the Hongkiang, is properly the capital of Tonquin. Quinhon is a seaport in 13° 50' n. and 69° e. The form of government in A. is an unlimited monarchy. Hwang-te, the emperor, has a personal council and seven ministers. The principal divisions of the empire, Tonquin and Cochin-China, have each a viceroy, and there is a governor at the head of each province. The empire of A. comprises Cochin-China (independent of the six provinces of lower Cochin-China, which were ceded to France in 1832-67) and the province of Tonquin (conquered in 1862) in the n.; and Tsiampa in the s.; also, as tributaries, the territory of the Laos, and the independent Moi tribes. The area of A. is about 200,000 sq. m., and its pop. is supposed to be 12,000,000, of whom the largest portion are in the provinces of Tonquin. Hué is the capital, with a population, including the suburbs, of 50,000, of whom about 3,000 are Chinese. The religion of the great mass of the people is a belief in witchcraft, while the educated classes adhere to the doctrines of Confucius, and Buddhism is tolerated. The Christians (Roman Catholics) are rated at 420,000. The army is in six corps, comprising 150,000 men; each corps comprises five regiments of 12 companies, or 25,000 men. The navy consists of seven small corvettes, 300 junks, and a few vessels ceded by France in 1876; the whole armament being 1400 guns and 16,000 men. The imports are hardware, cotton thread, hosiery, Chinese faience, mirrors, opium, paper, petroleum, tea, dyes, and liquors. There are no railroads or telegraphs in the empire. The country produces sugar, rice, tropical fruits, and valuable timber. The people partake of the characteristics of their neighbors, the Chinese on one side and the Malays on the other. They are indolent, inoffensive, and fond of gayety. In dress and social customs, they are much like the Chinese, though their women are not compelled to live in seclusion. See COCHIN-CHINA, *ante*.

ANAMBOE', or ANAMABOE', a seaport on the African gold coast, 10 m. e. of Cape Coast Castle; pop. about 5000. It is the seat of some trade, and was once a great slave port. The British fort here is the strongest on the coast. Exports, gold-dust, ivory, palm-oil, and pea-nuts.

ANAMORPHOSIS, an ideal change of development or form that may be found in the members of a group of plants or animals. It has been suggested that by the process of A. animals and plants of the present time have been developed. In optics A. is a drawing, which when viewed directly appears distorted or confused, but whose

image in a curved mirror, viewed from a proper point, is an intelligible and consistent picture.

ANANIAS, one of the members of the young church at Jerusalem who conspired with his wife, Sapphira, to make a false pretense respecting their gift of property to the community of the brethren, and was, with his wife, struck dead. Another A. is mentioned in Acts ix. 12, and elsewhere. Still another A. was a high-priest at Jerusalem (Acts xxiii. 2).

ANAPA', a sea-port in Russia, on the Black sea; pop. 9000. The town is fortified. Its harbor is not safe in all weather.

ANASTASIUS II., emperor, elected to the throne of Constantinople by the senate and people in 713. He organized a formidable naval force which mutinied at Rhodes and proclaimed Theodosius, a low person, emperor; and this Theodosius took Constantinople six months later, when A. escaped to Thessalonica and became a monk. In 721, he led a revolt against Leo, the successor of Theodosius, but fell into Leo's hands and was put to death.

AN'ATHOTH, a t. in Palestine, 4 m. n. of Jerusalem; the birthplace of Jeremiah; a city of priests and of refuge. It was an important place, but it is now supposed to exist only in the little village of Anata, at the top of a hill n. of Jerusalem, commanding a view of the Dead sea. At A., Jeremiah bought the field as a symbol of the return from captivity.

ANAXARCHUS, of Abdera. He was with Alexander in the Asian expedition, and is supposed to have been a friend and counselor, checking the conqueror's vainglory, and consoling his grief when he had slain Clitus.

ANAXIMINES, a Greek historian, b. in Lampsacus, Asia Minor, in the 4th c. B.C.; a pupil of Zeilus and Diogenes; said to have taught Alexander rhetoric, and to have accompanied him in the Persian expedition. He wrote histories of Philip of Macedon, of Alexander, and of Greece, of which a few fragments exist.

ANCACH', the n.w. department of Peru, between the Andes and the Pacific; about 18,000 sq.m.; pop. 317,000; very productive in cereals, sugar, and cotton. Marble and minerals abound. The capital is Huaras, in an extensive and populous valley. Other cities are Huaylas, Santa, Tumi, Cajatambo, Panabamba, and Pallaca, each the capital of a province of the same name. Through the passes in this department the Colombian army of the war of independence made its wonderful march to fall upon the Spanish forces at Junin.

ANCELOT, MARGUERITE LOUISE VIRGINIE CHARDON, a French novelist and dramatist, wife of Jacques A., b. Mar. 15, 1792. She greatly aided her husband in his dramas, and produced several comedies of her own, in all 20 plays, besides many novels which were popular. She was also an amateur painter. In 1828, she exhibited *Un Lécureur de M. Ancelet*, which was much talked about for its portraits of Parisian celebrities.

ANCHISES, in legend, the son of Capys and Themis, the founder of Ilium; from many indications supposed to have come from Assyria. Venus was enamored of his beauty, and by him became the mother of Æneas, whose maternity A. was not to disclose; but he did so, and was killed by a bolt from Jupiter—some say only blinded. His son bore him on his shoulders, fleeing at the destruction of Troy, and he is heard of in Italy, Sicily, and elsewhere. There was a grave on Mt. Ida said to be his, and he had a sanctuary at Egesta, in Sicily.

ANCHITHERIUM, an extinct quadruped of the miocene, now thought to represent a genus distinct from but analogous to the horse. The shaft of the ulna is complete and separate from the radius; the fibula and tibia are attached; the short crowns of the molars lack cement, and the teeth are inserted by distinct fangs. The foot has three digits, the middle being largest, and all reach the ground.

ANCIENNE LORETTE, a Canadian village, 7 m. w.s.w. of Quebec; pop. 71, 2333; the last refuge of the Huron Indians after their defeat at lake Huron in 1650. A remnant of the race still exists in the village.

ANCIENTS, COUNCIL OF, one of the two assemblies composing the French legislature in 1795-99. There were 250 members, none less than 40 years old. It was dissolved at the overthrow of the directory by Napoleon.

ANKARSTROEM, or ANKARSTRÖM, JOHAN JACOB, the assassin of Gustavus III., of Sweden, executed Apr. 29, 1792. He was the son of an army officer, a page in the court, and ensign in the royal body-guard. As a partisan of the old aristocrats, he was implicated in seditious movements in 1790, tried, and acquitted. The same year he joined the conspiracy of nobles, and to him fell the lot to kill the king, whom he shot at a masked ball, Mar. 15, 1792. He met his fate firmly, refusing to disclose the names of his accomplices.

ANDALUSITE, an anhydrous silicate of alumina, occurring in four-sided prisms, distinguished from feldspar by being harder and less fusible. A variety called chiastolite is found in abundance at South Lancaster, Mass.

ANDELYS, LES, a t. in the department of Eure, France, 20 m. n.e. of Evreux. It consists of Grand and Petit A. The former dates from the 6th c., and has a collegiate church with wonderful stained-glass windows. Petit A. clusters around château Gailard, built by Richard Cœur de Lion in 1195, and once one of the strongholds of France. The chief trade is in cloth. There are thread and leather manufactures. Pop. '72, 5379.

AN'DERLECHT, a t. in Belgium, a suburb of Brussels; pop. '66, 11,663. Here, Nov. 13, 1792, Dumouriez defeated the Austrians.

ANDERLO'NI, FAUSTINO, 1766-1847; an engraver of Padua. Among his works are a portrait of Herder, a Magdalen after Correggio, and a Holy Family, after Poussin.

ANDERLO'NI, PIETRO, 1784-1849; brother of Faustino; an Italian engraver, pupil of his father, and director of the Longhi school in Milan. His best pieces are "The Woman taken in Adultery," after Titian; "The Virgin," after Raphael; "Moses and Jethro's Daughter," after Poussin, and portraits of Da Vinci, Canova, and Peter the Great.

ANDERSON, a co. in s.e. Kansas; 576 sq.m.; pop. '75, 5309. The productions are agricultural. Co. seat, Garrett.

ANDERSON, a co. in n. central Kentucky, on the Kentucky river, intersected by Salt river; 300 sq.m.; pop. '70, 5449-693 colored; surface undulating; produces wheat, corn, tobacco, wool, and butter. Co. seat, Lawrenceburgh.

ANDERSON, a co. in South Carolina, on Savannah river; 800 sq.m.; pop. '80, 33,778-9593 colored. Two railroads pass through it. The surface is uneven; soil fertile and well cultivated to wheat, corn, cotton, etc. Co. seat, Anderson.

ANDERSON, a co. in n.e. Tennessee, on the Clinch and Powell rivers; 600 sq.m.; pop. '70, 8704-928 colored. There are coal veins, and salt and sulphur springs; products, wheat, corn, and oats. Co. seat, Clinton.

ANDERSON, a co. in central Texas, on Trinity river; 900 sq.m.; pop. '70, 9229-4436 colored. It is heavily timbered, and has a rolling surface and fertile soil, producing corn, cotton, and sweet potatoes. Co. seat, Palestine.

ANDERSON, a city in Madison co., Indiana, on a fork of White river, reached by two railroads. It is a manufacturing place, having a hydraulic canal with a fall of 44 ft. Pop. '70, 3126; of the township, 4713.

ANDERSON, ALEXANDER, 1775-1870; the first American wood engraver, son of a Scotch printer of a patriotic paper in New York, *The Constitutional Gazette*. At the age of 12, A. made attempts at engraving on type metal and copper plates. Then he studied medicine, and took the degree of M.D. in Columbia college in 1796; but he returned to art studies, his first regular employment being in illustrating a small book called the *Looking Glass for the Mind*. He invented his own tools, and followed Bewick of England in using wood blocks for engraving, in which he attained great perfection. He illustrated the first edition of Webster's *Spelling Book*, and for many years the American tract society's publications, working with great skill and fervor up to the year in which he died.

ANDERSON, Sir EDMUND, 1540-1605; an English judge, chief justice of common pleas in 1582, distinguished for zeal in the cause of the established church and for harshness toward dissenters. He was one of the commissioners in 1586 to try queen Mary of Scotland, and afterwards to try Sir Walter Raleigh. His reports of cases in his time in the common pleas and the courts of Westminster are very valuable.

ANDERSON, JAMES, 1662-1728; a Scotch lawyer and antiquary, of high reputation as a historian. He was employed by the Scotch parliament to prepare for publication what remained of the public records of the kingdom; on this work he labored many years, but he did not finish it, though it was published after his death. After the union he was appointed postmaster-general of Scotland, 1715, but lost the place two years later, and did not secure any adequate reward for his immense literary labor. His *Royal Genealogies from Adam to These Times* appeared after his death.

ANDERSON, MARTIN BREWER, LL.D., b. Maine, 1815; a graduate of Waterville college; tutor of Latin, and in 1843 professor of rhetoric in Newton theological seminary. He resigned in 1850 and became editor of the *New York Recorder*, a Baptist paper. In 1853 he was called to preside over the new Rochester university, and in 1868 was offered (but declined) the presidency of Brown university. He is a vigorous and popular preacher, though he has never been ordained to the ministry.

ANDERSON, ROBERT, b. Ky., 1805; d. France, 1871; brigadier-general in the U. S. army. He graduated at West Point in 1825; served in the Black Hawk war of 1832, and in the Florida war, and, May, 1838, became assistant adjutant-general on gen. Scott's staff. He was in the Mexican war, and was wounded at Molino del Rey. In 1847 he was made major of the 1st artillery. In Nov., 1860, he took command in Charleston harbor, and was for fifteen weeks shut up in fort Sumter by the rebels. On the 14th of April, after a bombardment of 36 hours, being short of provisions, though the fort was still tenable, he marched out with the honors of war, losing none of his men, and went to New York. He was appointed brigadier-general in May, 1861, and sent to command the department of

the Cumberland, but his health failed, and with brevet of major-general in the regular army he retired from the service. He translated and adapted several works on artillery practice.

ANDERSON, RUFUS, D.D., LL.D.; b. Maine, 1796; graduate of Bowdoin, 1818, and studied theology at Andover. He was secretary of the American board of foreign missions for 34 years. Resigning at the age of 70, he received a gift of \$20,000 from New York and Boston subscribers, all of which he gave to the American board, reserving only the right to draw for his actual needs. He is the author of *Observations on the Peloponnesus and the Greek Islands*, and various books concerning missions and the work of the American board.

ANDERSONVILLE, in Sumter co., Ga., the location of a military prison of the "confederate states." The prison site was a pine and oak grove of 22 acres, on the side of a hill of red clay, 1600 ft. e. of the railroad. The first prisoners arrived Feb. 15, 1864, and the last in April, 1865; total received, 49,485; died, 12,926; of which 3952 died from diarrhœa; 3574 from scurvy; 1648 from dysentery. The prison was notorious for its unhealthfulness and its discipline for barbarity; and in 1865, after the close of the war, Henry Wirz, a Swiss, the chief instrument of ill treatment, was indicted for "injuring the health and destroying the lives of prisoners by subjecting them to torture and great suffering, by confinement in unhealthy and unwholesome quarters, by exposing them to the inclemency of the winter and the dews and burning sun of the summer, by compelling the use of impure water, and by furnishing insufficient and unwholesome food; for establishing the dead line and ordering the guards to shoot down any prisoner attempting to cross it; for keeping and using bloodhounds to hunt down prisoners attempting to escape; and for torturing prisoners and confining them in stocks." He was found guilty and hanged. Under orders of the government, the place where the bodies had been rudely buried in long trenches was arranged as a cemetery, and adorned with gravel walks and trees; 12,461 dead soldiers of the union army were identified, and their places of burial marked with tablets; 451 were "unknown."

ANDERSSON, ADOLPH, b. 1818: a German chess player. He was a teacher of mathematics in Berlin. In 1851, he defeated Staunton and other British players at the London tournament; but was beaten in Paris, 1858, by Paul Morphy. He received the first prize in London in 1862. He is an author of papers and books on the game.

ANDERSSON, CARL JOHAN, 1827-67; natural son of an English sportsman residing in Sweden. In 1849, he joined Francis Calton in a journey in South-west Africa, continued alone through 1853-54, and on his return to England published *Lake Ngami, or Explorations and Discoveries during Four Years' Wanderings in the Wilds of South-western Africa*. He made a journey to lake Ngami in 1868 with Green, the elephant hunter, and found his way to the red tribes of Herrevo land. On his return he published a book on the Okovango river. In May, 1866, he went on an exploration to the Cunene for the purpose of establishing commercial intercourse with the Portuguese settlements n. of that river. He came in sight of the stream, but was too feeble to cross it, and died in trying to return to Cape Town.

ANDOCIDES, 467-391 B.C.; a Greek orator and diplomatist. He held for a time a command in the Athenian fleet, and was employed in various embassies to foreign states. He was implicated with Alcibiades in the charge of mutilating the busts of Hermes; he accused others, who were put to death, but he was deprived of the rights of citizenship and went into exile. Thrice he returned to Athens, and was as often sent out, but from 403 to 393 he held honorable positions there. Three orations by him of great historical value are extant.

1 ANDOVER THEOLOGICAL SEMINARY, at Andover, Mass., founded in 1808, 2 1 endowed by Samuel Abbot of Boston, John Phillips, jr., and Phœbe Phillips of Andover, Moses Brown and William Bartlett of Newburyport, and John Norris. Since the founding the funds have been increased by large donations, and now amount to \$600,000. The value of the property is \$225,000. The theological seminary was placed under the same management as Phillips academy, which had been in operation more than a quarter of a century; and its purpose was declared to be "to provide for the church a learned, orthodox, and pious ministry." It is doubtless the oldest distinctly theological school in this country. The colleges had previously supplied all the public training of candidates for the ministry. Its general plan has been taken as the model for many institutions of like purpose. The government is by a board of 13 trustees, 3 visitors, 8 professors, and a librarian. Since the foundation of the seminary, there have been 7 professors of sacred literature, 2 of Christian theology, 7 of sacred rhetoric, 4 of ecclesiastical history, 1 in the special course, and 1 of elocution. In 1879, it had 7 professors and 4 lecturers. Special lecturers address the students every year in various departments of theological or practical instruction. In 1879, the seminary had 90 students. Its graduates number more than 2000; and about 3000 students have been connected with it. Its situation is quiet and beautiful, about 23 m. n. of Boston. The seminary is under the control of Congregationalists, but is administered in a spirit of such evangelical liberality that many who are now eminent ministers in other denominations have availed themselves of its privileges. Room-rent and tuition are free, and

indigent students are assisted. The course of study occupies three years, and the aim is for a solid and thorough training. It has a library of 37,000 volumes. On the roll of its professors, past and present, are names distinguished in all departments of theological learning, biblical criticism, and sacred rhetoric. Its graduates are scattered through all portions of the United States, and as missionaries in many heathen lands. Edwards A. Park, D.D., who occupies the chair of theology, has for many years edited the *Bibliotheca Sacra*, a theological quarterly of the highest rank, well known on both sides of the Atlantic.

ANDRA'DA, DIEGO PATYA D', 1528-75; a Portuguese theologian, who distinguished himself in the council of Trent, to which he was sent by king Sebastian. He wrote several volumes of sermons, and other works. His *De Conciliorum Auctoritate* was much esteemed at Rome for the great extension of authority it accorded to the pope. His *Defensio Tridentine Fidei* is a rare and curious work, in which he discusses the dogma of the immaculate conception. It was published after his death.

ANDRA'DA E SYL'VA, BONIFACIO JOZÉ D', 1765-1838; a Brazilian statesman and naturalist. He studied in Paris under Lavoisier, and in 1800 was appointed professor of geology at Coimbra, and, soon after, inspector-general of the Portuguese mines. In 1812, he was made perpetual secretary of the Lisbon academy; in 1819, became one of Dom Pedro's ministers. When the independence of Brazil was declared, A. was made minister of the interior and of foreign affairs, but his democratic principles induced his dismissal from office, in July, 1823; and on the dissolution of the assembly in Nov. he was banished, living in exile in France until permitted to return, in 1829. When Dom Pedro I. abdicated, April 7, 1831, he selected A. for the guardian and tutor of Dom Pedro II. In 1833, A. was again arrested, this time for intriguing in behalf of Dom Pedro I., and was deprived of position, passing his remaining years in retirement. He wrote no large work, but many papers on mines and mining.

ANDRASSY, GYULA, Count, b. 1823; of an old and noble Hungarian family. He was in the Presburg diet, 1847-48; lord-lieutenant of Zemplen co.; and led the militia against the Austrians. He was Hungarian envoy to Turkey, and, 1849-57, an exile in France and England. Returning home, he was a member of the diet in 1861, and its vice-president 1865-66. After the recognition of Hungary as a part of the Austrian empire, Deak procured the appointment of A. as prime minister Feb. 17, 1867, and he led a popular and reforming administration, working for the political emancipation of the Jews and against the temporal power of the pope. He succeeded count Beust, Nov. 9, 1871, as minister of foreign affairs, holding the place until Aug. 18, 1879, when his resignation was accepted.

ANDRE'A, GIOVANNI, an Italian canonist of the 14th c., of whom many remarkable stories are told, such as his sleeping every night for 20 years on the bare ground with only a bear's skin for covering; and that he had a daughter, Novella, so accomplished in law that she read his lectures in his absence, but who was so beautiful that she read behind a screen lest her face should distract attention from the theme. A. was 45 years professor of canon law at Bologna, where he died of the plague. He was the author of several works on law, but not much is known of his life.

ANDRE'A, PISANO, or ANDREA DA PISA, 1270-1345; an Italian sculptor and architect; employed on the Pisa cathedral, on the bronzes of Perugia, and on the façade of the cathedral of Santa Maria del Fiore of Florence. He made for the same church statues of Sts. Peter and Paul and of Boniface VIII., and spent some time in Venice making statues for the front of St. Mark's. Returning to Florence, he was put in charge of all public works. Among his own productions are the bronze reliefs for the gates of the baptistery, which represent incidents in the life of St. John, and which gained him the honorary citizenship of the republic. Among designs by him are the castle of Scarperia, the Venice arsenal, the church of San Giovanni at Pistoia, enlargements for the ducal palace at Florence, towers and gates for the city wall, and a citadel.

ANDREÆ, JAKOB, 1528-90; a German theologian. He studied at Stuttgart and was pastor there in 1549; in 1557, he preached to the Würtemberg court, and attended the diets of Ratisbon and Frankfurt. He was afterwards professor of theology and chancellor in the university of Tübingen and provost of the church of St. George. He took a leading part in Protestant discussions and movements, particularly in the adoption of a common declaration of faith by the two parties. He was one of the secretaries of the conference of Worms. In the latter part of his life he traveled in Bohemia and Germany, working for the consolidation of the reformation, conferring with pastors, magistrates, and princes. He was the author of more than 150 works, nearly all polemical and vigorously written, Lutheran for the most part, and opposed to Calvinism.

ANDREÆ, LAURENTIUS, or LARS ANDERSSON, 1482-1552; a Swedish reformer and deacon of the cathedral of Upsal. He studied in Rome, but came home a Protestant. He was made chancellor by Gustavus Vasa, who desired him to translate the Bible, in which work he was assisted by Claus Petri. A. was in high favor until he was charged with having neglected to disclose a conspiracy against the king, of which he had knowledge, for which he was sentenced to death. He escaped, however, by the payment of a large sum, and d. peacefully at Strengness.

ANDREA'NI, ANDREA, 1540-1623; an Italian painter and engraver on wood, in which art he excelled. Some of the most notable of his works are Titian's *Deluge*, *Pharaoh's Host Destroyed in the Red Sea*, *The Triumph of Caesar* (after Montegna), and *Christ Retiring from the Judgment Seat of Pilate*. From using a similar monogram his work has sometimes been mistaken for that of Altdorfer.

ANDREE, KARL THEODOR, b. 1808; a German journalist. He was studying at Jena, when he was arrested and tried for revolutionary complicity in 1838, but was acquitted and turned his attention to journalism. His special pursuit is geography, and for many years he has edited the *Globus*, a geographical and ethnological publication. A. has paid much attention to the western continent in his *North America*, *Buenos Ayres*, and other works.

ANDRÉS', JUAN, 1740-1817; a learned Spanish Jesuit, and a teacher of philosophy at Ferrara until the suppression of the college. He wrote much on scientific subjects, on music, art, and teaching the deaf and dumb; but his main work was *On the Origin, Progress and Present State of All Literature*, in Italian. He was keeper of the royal library at Naples, in 1806; became blind in 1815, and retired to Rome.

ANDREW, a co. in n.w. Missouri, on the Kansas border; intersected by the Platte and other streams, and having railroad communication with St. Joseph; 425 sq.m.; pop. '80, 16,123-401 colored. The soil produces cereals and tobacco, and coal has been found. Co. seat, Savannah.

ANDREW, or ANDRÁS, I., King of Hungary from 1046 to 1058; cousin of St. Stephen, the introducer of Christianity. A. fought with varying fortune against Henry III. of Germany, and against his own brother, Béla, and was finally defeated by Polish and Hungarian opponents. He d. in 1061.

ANDREW II., 1176-1236; King of Hungary in 1205, after a civil war with his nephew, Ladislas III. In 1217, he conducted an unsuccessful crusade against the Moslem powers. In 1222 he granted the golden bull called the magna charta of Hungary, which confirmed the rights and titles of the bishops and nobles whose revolts had disturbed his reign.

ANDREW III., d. 1301; the last Hungarian king of the Arpad family; grandson of Andrew II.; b. in Venice and succeeded Ladislas IV. in 1290. He had to defend his crown against the pretensions of Rudolph of Hapsburg and pope Nicholas IV., both being claimants, and also against a son of the king of Naples, who claimed to be of the house of Arpad by his mother. His reign was brief and disturbed by rebellion.

ANDREW, JAMES OSGOOD, D.D., 1794-1871; b. Georgia; an itinerant Methodist Episcopal preacher of South Carolina conference, consecrated bishop at Philadelphia in May, 1832. On his social relations began the division of the M. E. church into "North" and "South." His second wife was a slave-holder, and in the general conference of 1844 it was declared that "this would greatly embarrass the exercise of his office as an itinerant general superintendent, if not in some places entirely prevent it," and it was resolved "that it is the sense of this general conference that he should desist from the exercise of this office so long as this impediment remains." The southern delegates protested that the action was extrajudicial and unconstitutional, and the difficulty was finally settled by dividing the churches and property into the northern and southern jurisdictions. Bishop A. adhered to the south, and continued his episcopal work until 1868, retiring then from age. He wrote on *Family Government*, and other subjects.

ANDREW, JOHN ALBION, LL.D., b. Maine, 1818; d. Boston, 1867; a graduate of Bowdoin in 1837. He was admitted to the Boston bar in 1840; practiced there 20 years, and was conspicuous in cases arising under the fugitive slave law. In 1858 he was a member of the legislature; in 1860 he was a delegate in the national convention which nominated Lincoln for president, and was himself elected governor of Massachusetts by the largest vote ever given for a candidate. He foresaw the danger of civil war and took immediate steps to perfect the organization of the militia of his state. Within a week after the first call for troops he sent forward five infantry regiments, a battalion of riflemen, and a battery of artillery. In 1861, and yearly until he insisted on retiring in 1866, he was re-elected governor, and he was in all the war conspicuous for his friendly care of soldiers. He was at the conference of loyal governors in Sept., 1862, and wrote the address presented by them to the president. In religion he was Unitarian; and presided at the first national convention of that denomination in 1865. He declined the offered presidency of Antioch (Ohio) college.

ANDREWS, EDWARD GAYER, D.D., b. N. Y., 1825; a graduate of Wesleyan university in 1847. The next year he began ministry in the Methodist Episcopal church, and was a teacher in Oneida conference seminary, becoming its president in 1854. He resumed the pastorate in 1864 in New York east conference, and was elected bishop in 1872.

ANDREWS, ETHAN ALLEN, LL.D., 1787-1858; b. Conn.; a graduate of Yale. He published a number of school-books, and, in 1850, a good Latin-English lexicon.

ANDREWS, GEORGE L., b. Mass., 1827, graduated first in his class at West Point in 1851, was acting assistant professor of engineering there in 1854-55. For distinguished

services in the army of the Potomac he was made brevet brigadier and major-general of volunteers. In 1871, he became professor of French at West Point military academy.

ANDREWS, JAMES PETTIT, 1737-97; an English historian. He left unfinished a *History of Great Britain, Connected with the Chronology of Europe*, commencing with Caesar's invasion; the English history on one page and the synchronous European history on the opposite page. He continued Henry's history, and made a good collection of anecdotes.

ANDREWS, LORRIN, 1795-1858; b. Conn., educated at Jefferson and Princeton colleges, and went as missionary to the Sandwich islands in 1827. In 1831 he founded what became the Hawaiian university, in which he was professor. He was long privy-councilor and judge under the native government. He wrote a Hawaiian dictionary, and published part of the Bible in that tongue; he also wrote on the history of the islands.

ANDREWS, STEPHEN PEARL, b. Mass., 1812; a student of social science and philology. He has written much on themes of society, government, and language. Among his works are: *Comparison of the common law with the Roman, French, and Spanish civil law, on entails, and other limited property, in real estate; Love, Marriage, and Divorce; French without a master*; phonographic readers and class-books: and a phonographic reporter.

ANDRIS'CUS, or PSEUDO PHILIP, a person of mean origin, who claimed to be a son of Perseus, the last king of Macedonia. He was imprisoned in Rome because of this pretense, but escaped and found partisans enough in Thrace to defeat the prætor Juventius, who had been sent against him. After a brief reign of cruelty and extortion he was defeated, 148 B.C., taken to Rome by Q. Cæcilius Metellus, and put to death. But the recapture of Macedonia cost Rome 25,000 men.

ANDROCLUS, or AN'DROCLES; a Roman slave, perhaps a tamer of wild animals, who led about the streets a lion which had refused to attack him when set loose upon him in the arena. But Aulus Gellius says that A. took refuge from a severe master in an African cave, where came a lion with an injured foot which the slave cured, after pulling out a large thorn, and the grateful animal followed him thereafter. Aulus Gellius relates the story as having come to him from an eye-witness.

ANDROS, Sir EDMUND, 1637-1714; son of an officer in the English royal household, a major in prince Rupert's dragoons. In 1674, he was sent to America as governor of the colony of New York, and to him Sir Anthony Colve, the governor during the temporary Dutch supremacy, surrendered without forcible opposition. A. was in more or less trouble with the English colonies over which he claimed authority, and deposed Carteret of East Jersey in 1680. The next year he was called home under accusation, but managed to escape serious prosecution. When the New England colonies were consolidated in 1686, A. was made governor-general with large powers. He was to admit religious toleration, but could suppress all printing, name and change his council at will, and, with their consent, levy taxes and control the militia. Connecticut refusing to obey his orders, he appeared in the council chamber at Hartford, in Oct., 1687, with an armed guard, and demanded the surrender of the colony's charter. Evidence is wanting for the story of the hiding of the charter in the oak tree; a duplicate may have been so hidden, but A. seems to have secured the original document. In 1688 New York and New Jersey were attached to New England and his rule extended over them. On hearing of the revolution in England the people of Boston imprisoned A. and some of his officers, April 18, 1689, and Leisler set up a rebel government in New York. In July, A. and a committee of accusers were ordered to England, but he was acquitted without formal trial. In 1692, he came back as governor of Virginia, where he was popular, retiring in 1693. and becoming governor of Guernsey in 1704-6. In 1691, he published an account of his proceedings in New England.

ANDROSCOG'GIN, a co. in s.w. Maine; 400 sq.m.; pop. '70, 35,866; noted for extensive water and manufactures on the two Androscoggin rivers. Agriculture is the main business; dairy products are exported. The Portland branch of the Grand Trunk, the Maine Central, and other railroad lines, traverse the county. Co. seat, Auburn.

ANDROSCOG'GIN, a river in Maine and New Hampshire, rising in Umbagog lake and emptying into the Kennebec above Bath. It is 157 m. long, about half of it in each state.

ANDVA'RI, in Norse mythology, the name of the fish-shaped dwarf who owned the ring, with the curse of ill-obtained gold, fatal to the possessor. This is the key-note of the remarkable stories of Sigurd Fafnisbane and the German legends recently written in music by Wagner in an elaborate trilogy, consisting of "The Rhinegold" (the temptation), the "Valkyria" (or Fates), "Siegfried" (the hero), and "Die Gotterdammerung" (the "Twilight of the Gods," or end of all things).

ANECDOTE, from the Greek, originally meaning something not published. Procopius called his secret history of Justinian's court *Anecdota*. It is applied also to portions of ancient writings long unpublished, and a number of such *Anecdota* have been collected in volumes and printed. As ordinarily used, A. now means some

isolated fact, usually of a personal nature, which would interest a listener. There are a great many books of A., the most celebrated in English being the *Percy Anecdotes*.

ANEL, DOMINIQUE, about 1679-1730; a French surgeon, inventor of the probe and syringe, bearing his name; skillful in treating aneurism and fistula lachrymalis.

ANEMOSCOPE, a vane or weathercock, or any instrument which shows the direction of the wind; often with a spindle attachment that turns an index or a compass scale in a room, showing within a house the course of the wind. Latterly the A. has been made self-recording, and now in most observatories needs no watching, every movement of the wind being written down; the force or pressure and the velocity in miles per hour being also recorded. This is done by pencils which press lightly upon a cylinder covered with a sheet of paper divided into horizontal hour lines, the lines moving at the rate of half an inch an hour, a complete revolution of the cylinder occupying 24 hours. Lines marked by the pencils show by their relation to the graduated lines the direction of the wind at any moment of the day.

ANGARA', or UPPER and LOWER TUNGUSKA, a river of Asiatic Russia, flowing out of lake Baikal, passing Irkutsk, and joining the Yenesei, after a course of 100 miles. The current is strong, with many rapids, and the scenery often beautiful.

ANGELI, FILIPPO, d. 1645; an Italian painter early in the 17th century. He excelled in landscapes, and was among the earliest to apply strict rules of perspective. His works are scarce. Two others of his name were known as painters, Giulio Cesare, 1570-1630, and Guiseppe, b. 1715.

ANGELIC HYMN, the hymn beginning "Glory be to God on high," so called because the first words are recorded to have been sung by the angels heralding the infant Saviour at Bethlehem.

ANGELICO, FRA. See FIESOLE, *ante*.

ANGELINA; a co. in e. Texas; 1039 sq.m.; pop. '70. 3985-742 colored. It is heavily timbered with a great variety of trees. Corn, cotton, sugar-cane, rice, and tobacco are produced. There are steam mills, and petroleum is found. Co. seat, Homer.

ANGELL, JAMES BURRILL, LL.D., b. R. I., 1829. In Sept., 1845, he entered Brown university, and graduated four years later. In 1851 he went to Europe, where he spent two years in study and travel. He returned to accept the chair of modern languages and literature in the university of which he was a graduate, a position which he filled for seven years. Henry B. Anthony having been elected U. S. senator, offered him the editorial charge of his newspaper, the *Providence Daily Journal*, and in 1860 prof. A. assumed that position. After six years of journalistic labor, the offer of the presidency of the university of Vermont drew him again to academic life. He declined the presidency of the university of Michigan, at Ann Arbor, when it was offered him in 1869, but subsequently accepted it in 1871. In March, 1880, he was appointed minister to China. He is the author of many articles in the *North American Review*, and other magazines.

ANGELL, JOSEPH KINNICUT. 1794-1857; b. R. I.; a graduate of Brown university in 1813. He was a writer on law; edited a law journal in 1828-31; and was for years a reporter for the Rhode Island supreme court. He was author of a treatise on the laws of property, and at his death was engaged on a treatise on the *Law of Highways*, which was completed by Thomas Durfee. Lord Brougham praised A.'s work on *Limitation of Action*.

ANGELUS DOMINI, the name of a brief prayer repeated by Roman Catholics at the sound of the Angelus bell at sunrise, noon and sunset.

ANGELUS SILESIUS (JOHANN SCHEFFLER). 1624-77; a German philosophical poet, brought up a Protestant. He was physician to the duke of Würtemberg, and became a Romanist, taking orders as a priest. His faith was peculiar, a mystical, sentimental pantheism, imbibed from the works of Tauler and Böhme. The essence of God he held to be love; and he reasoned that as God can love nothing inferior to himself, and cannot be an object of love to himself without manifesting himself in finite form or becoming man, God and man, therefore, are essentially one. His hymns are very popular in Germany.

ANGERBODA, in Norse mythology, a giantess, mother of Fenrir, the monster wolf which, at the last day, is to swallow and conquer Odin, or the Sun.

ANGERMÜNDE, a t. in Prussia, capital of a circle of the same name in the province of Brandenburg, 43 m. from Berlin by railway. Pop. about 6400. The chief industry is the manufacture of woollen and linen goods.

ANGEYJA, in Norse mythology, one of Heimdall's nine mothers. The "Edda" says: "Nine giant maids gave birth to the gracious god at the world's margin."

ANGHIERA, PIETRO MARTIRE, D' (PETER MARTYR), 1455-1526; an Italian historian. He became a priest in Spain in 1487; in 1501 he was on a mission of state to Egypt, and in 1505 was prior of the church of Grenada. He was a member of the council of the Indies. His works are important; the *Opus Epistolarum* records almost every event of

consequence from 1488 to 1525, and *De Rebus Oceanis et Orbe Novo* is a valuable account of the new-world discoveries, taken from the lips and reports of Columbus and other early navigators.

ANGILBERT, SAINT, secretary and friend of Charlemagne, and the most distinguished poet of his age. He filled the highest offices, and married the great monarch's daughter Bertha; he afterward retired from public service and became abbot of a monastery returning from time to time as the state required his services. In 800 he assisted in Rome at the coronation of the emperor, who called him the "Homer of the age." He died in 814.

ANGLESEA, ARTHUR ANNESLEY, Earl of, 1614-86, lord privy seal in the reign of Charles II. He was educated at Oxford, and studied law at Lincoln's inn. He was sent as commissioner to Ulster in 1645 to oppose the designs of the rebel Owen Roe O'Neil. After the death of Cromwell he was president of the council of state, and concerned in bringing about the restoration. He succeeded to his father's titles in 1640. A. was a man of great abilities and extensive learning, well acquainted with the constitution and the laws of England, and the author of several works of a political and polemical character.

ANGOT, or ANGO, JEAN, d. 1551; a French merchant, in African and East India trade. When some of his ships had been taken by the Portuguese he provided and fitted out an armed fleet that kept Lisbon blockaded until he had received indemnity for his losses. Immensely rich at one time, he lost in speculations and in money lent to the king of France, and his last years were passed in destitution.

ANGOULÊME, CHARLES DE VALOIS, DUC D', 1573-1650; son of Charles IX. of France, and Marie Touchet; reared by his uncle Henry III. One of his half sisters, the marchioness of Verneuil, became the mistress of Henry IV. Charles was well educated, and at the age of 16 was grand prior of France in the order of knights of Malta. In 1591, he married a daughter of marshal d'Amville, afterwards duke of Montmorenci. In 1589, Henry III. was assassinated, but on his death he commended Charles to his successor, Henry IV., by whom he was made colonel of horse; but the relationship of his sister to the king so displeased him that he joined with the duke of Savoy, Biron, and Bouillon, one of their main purposes being to force the king to repudiate his wife and marry the marchioness. Biron and Charles were arrested, and the former was executed, but the latter was released after a short imprisonment, owing to the influence of his relative, aided by his aunt the duchess d'Angoulême, and his father-in-law, the marquis d'Entragues. In 1604, he and his father-in-law were condemned to death and his mother to perpetual imprisonment in a convent; the woman obtained pardon and had the other sentences commuted to perpetual imprisonment. A. was in the Bastille 11 years, but in 1616 he was released and restored to his rank of colonel-general of horse. He was afterwards engaged in an important embassy to Germany. In 1627, he commanded the large force assembled for the siege of La Rochelle, in 1635, he was general of the French army in Lorraine, and in 1636 lieutenant-general of the armies. He was the author of *Memoirs from the Assassination of Henry III. to the Battle of Arques*, and other works.

ANGUS, EARL OF. See DOUGLAS, *ante*.

ANGUS, JOSEPH, D.D., b. 1816; educated at Edinburgh university; president of Regent's Park (Baptist) college, London; author of the *Bible Hand Book*, *Hand Book of English Literature*, and other works; one of the revisers of the English New Testament for the American Bible union, and a member of the committee of the convocation of Canterbury for similar revision. He visited the United States in 1873 as one of the delegates to the Evangelical Alliance.

ANGUSSOLA, or ANGUISCIOLO, SORONISBA, 1533-1620; one of the best portrait painters of the latter part of the 16th century. In 1560, at the invitation of Philip II., she visited Madrid, where her work received great praise. Vandyck is reported to have said that he derived more knowledge of the principles of his art from her conversation than from any other source. Specimens of her work are to be seen in Madrid, and in Florence, and one portrait of herself is at Althorp. She had three sisters, all of whom were artists of repute.

ANIMALS, CRUELTY TO. There are societies for the prevention of cruelty to animals in 33 of the 35 United States. The first society was chartered by the legislature of New York in 1866, chiefly through the efforts of Henry Bergh, who has been its president for 13 years. Its name indicates its purpose. Up to the close of 1878 it had secured prosecution in 6909 cases for working horses suffering from sores, and in nearly 1000 for cruel beating of animals. The society met with much opposition until a decision of the highest court affirmed its powers. There are 13 societies formed with this as a model in various states.

ANIMISM, a term formerly applied in biology to denote the theory that the soul, *anima*, is the vital principle, the cause of the normal phenomena of life and of the abnormal phenomena of disease. It is now current in the wider anthropological sense, as including "the general doctrine of souls and other spiritual beings." The absence of

any other suitable word is thought to render this application indispensable, and may be conceded to render it allowable; for "spiritualism," though occasionally used in a general sense, has become associated with a particular modern development of animistic doctrine; "anthropomorphism," though less objectionable, is inadequate; while "theology" cannot be extended to include the lower forms of the doctrine of spiritual beings, and indeed many of its higher developments, except by a departure from ordinary usage. An animistic philosophy, explaining the more strange or striking of the phenomena of nature by the hypothesis of direct spiritual agency, is universally prevalent among savage races; and there seems tenable ground for the inference that it must have been the philosophy earliest developed among prehistoric societies of mankind. It is manifestly the development of that earliest analogical reasoning which imagines external objects to be conscious and animated with life essentially like our own; it is the expression and application of the first general theory of natural causes, rude and inadequate, yet marvelously self-consistent and serviceable; and its history appears to be primarily that of a dominant and pervading philosophy, applied to explain all the phenomena of nature and life, save only those ordinary sequences which the uncivilized man regards as needing no explanation; afterwards, in the progress of culture, its history is that of a system of thought modified and restricted by the increase of positive knowledge, and surviving in either greatly refined or greatly enfeebled forms. A. is one of those terms which should be used not without cautious limitation of its range. In our ignorance of the nature of the *soul* in brutes or in men, the philosophy of the soul may easily extend itself unduly, involving on one side matter, and on the other side spirit in statements whose indeterminateness will render them unsatisfactory. A., as denoting the doctrine of the soul, has no claim to decide scientific principles pertaining to either the purely spiritual or the purely material realm.

ANJER', or ANJIER', a seaport of Java, on the straits of Sunda, 18 m.w. of Batavia. It is protected by a fort, and has some trade with passing vessels. Mails for Batavia are landed at A.

ANKER, a liquid measure once much used in north Europe, now only in Denmark and Norway. It varies in capacity; at Copenhagen it contains 9.88 U. S. gallons; at Hamburg, 9.54; at Bremen, 9.57; at Lubeck, 9.89; at Amsterdam, 10.22; at Berlin, old measure 12.45; new, 9.07 gallons.

ANK'WITZ, NICOLAJ. Count, d. 1794; a Polish politician, ambassador to Copenhagen, and deputy from Cracow in the diet. In the diet which was forced to the partition of the kingdom he was deputed to sign the treaty with Russia, and immediately afterwards a large salary was conferred on him by Russia, with the appointment of president of the council. Soon after the beginning of the Kosciusko revolution he was convicted of treason, and hanged.

ANNAM'. See ANAM, *ante*.

ANNAPOLIS, a co. in w. Nova Scotia, on the bay of Fundy; 1700 sq.m.; pop. '71, 18,121. The surface is varied, but generally rough, and well adapted to fruit culture. Agriculture is the main business, and dairy products are exported. There are also valuable deposits of iron ore. Capital, Annapolis, formerly Port Royal,

ANNARR', or ONARR, in Norse mythology, the husband of night, and father of Jord (the earth).

ANNE ARUNDEL, a co. in Maryland; 750 sq.m.; pop. '70, 24,457—17,732 colored. It is watered by the South and Severn rivers. The surface is hilly, and the soil fertile, producing wheat, corn, tobacco, etc. Coal and iron are found. Co. seat, Annapolis, which is also the capital of the state.

ANNE BOLEYN, or BULLEN, or BOULEYNE, one of the wives of Henry VIII., and mother of queen Elizabeth. The date of her birth is uncertain, 1500 to 1507 being given, but the earlier is most likely. She was beheaded, May 19, 1536. A. was a daughter of Sir Thomas Boleyn, who was viscount Rochford, and earl of Ormond and Wiltshire. She was one of the ladies chosen to accompany princess Mary when she went to France in 1514 to wed Louis XII. After the death of Louis, Mary returned to England, but A. remained in the household of Claude, queen of Francis I. She was recalled to England in 1522, or 1527, and admitted to the household of Catherine of Aragon, where she seems to have been circumspect, witty, and vivacious. Near the end of 1527, Henry declared to Wolsey his intention to marry her as soon as a divorce from Catherine could be obtained. After five years of effort the divorce came, but before this, Jan. 25, 1533, Henry and A. were married. The divorce was secured in May, and on the first of June, A.'s coronation took place. Three months later the princess Elizabeth was born. A. led an easy life for a few years, until Henry fixed his eyes on Jane Seymour, when it was not at all difficult to prove A. dissolute with a view of putting her out of the way. A committee of lords, one of them her own father, in 1536 reported her incontinent with half a dozen persons, including her own brother. She was of course convicted, degraded, and executed; but on the scaffold she behaved with dignity and courage, protesting her innocence to the last. In the strange lack of authentic details of A.'s history, especially in regard to her alleged crimes, there has been room for differences of opinion concerning her among historians.

ANNE OF BRITTANY, Queen of France, 1476-1514; daughter and heiress of Francis II., duke of Brittany. She received that duchy as her dowry on marrying Charles VIII., Dec. 6, 1491, Brittany then becoming incorporated with France. She had been affianced to Maximilian of Austria, but Louis XI., her guardian, forbade the marriage, and thus assured the aggrandizement of his kingdom and family. After her husband's death she married his successor, Louis XII., over whom she had great influence, and she administered the kingdom with ability during his campaigns in Italy.

ANNE OF CLEVES, 1515-57; fourth wife of Henry VIII., of England, daughter of John, duke of Cleves. Henry wedded her reluctantly to make friends among the Protestant German princes, Jan. 6, 1540; but he divorced her in July of that year, giving her an annuity of £3000.

ANNEKE JANS. See **BOGARDUS**, **EVERARDUS**.

ANNESLEY, ARTHUR. See **ANGLESEA**, Earl of, *ante*.

ANNIHILATIONISM, the theory of the utter extinction of man's being, both bodily and spiritual, either at death or at some later period. Little was heard of the doctrine until in the last century, when Taylor, of Norwich, England, McKnight, and a few others wrote upon it. Among later supporters perhaps archbishop Whately may be counted for in his *View of the Scripture Revelations Concerning a Future State*, he says that in the passages in which "death," "destruction," "eternal death," are spoken of, the words may be taken as signifying literal death, real destruction, the utter end of things; that "unquenchable fire" may mean a fire that quite consumes what it feeds upon, and the "worm that dieth not" may be that which entirely devours its prey. In the United States, the question was revived about 25 years ago by *Six Sermons on the Question, are the Wicked Immortal*, by George Storrs. Just before these appeared, Dr. McCulloch, in his *Analytical Investigations concerning the Scripture*, maintained that after the final decisions at the judgment the wicked will be utterly destroyed by the visitation of God in wrath. Hudson, in *Debt and Grace, as Related to the Doctrine of a Future State*, denies that the natural immortality of the soul is ever expressed or even implied in the Bible; on the contrary, life and immortality are brought to the redeemed alone; all others being not only naturally mortal, soul and body, at death, but, after that mortal suspension of positive existence, all are raised at the final resurrection and cast into the lake of fire at the second death. He denies that endless conscious suffering is ever affirmed to be the nature of future penalty, but affirms that the penalty consists in privation, and that in the perpetuity of this privation consists the eternity of future punishment. The scripture terms, from which eternal misery is usually understood, such terms as "condemnation," "destruction," "perdition," "damnation," etc., he thinks express the painful and penal consignment of the entire nature to disorganization and to the complete non-existence from which it originally came. Mr. Landis replies to Hudson, in his treatise *On the Immortality of the Soul and the Final Condition of the Wicked*, and many other writers have discussed the subject, especially in religious reviews and magazines.

It is significant that those who hold to this theory of late prefer to use instead of A. the term "conditional immortality." Three considerations may be noted as bearing on this subject: 1. The theory of man's tripartite nature, body, soul, and spirit, may be so held as to admit as possible a literal destruction (i.e. de-structuralization) of man, an utter and final disorganization, wherein body and soul, as forming man's organized existence, might cease to be, while the spirit, or the inmost essence of his being, might remain forever disembodied and disorganized; and thence might fitly be spoken of as "cast out into the outer darkness" and swallowed up in "the bottomless pit." 2. To establish the doctrine of entire extinction of a being like a man, existing in various departments, whether two or three, it is necessary that the origin of his complex being be understood. Was he created out of nothing, or out of somewhat previously existing, or out of God as a child out of parents? 3. The theory of A. requires that the word "death" in the Bible, and in science, be taken to mean, when literally used, extinction of being. Thus the question arises whether the Bible gives "death" any meaning beyond destruction of the organism; and whether science can assure us that death in any case is more than dissolution of the organism, or destruction, i.e. de-structuralization. In the lack of affirmative answer on these points from either science or revelation, it would be found difficult to prove the theory of A., even were it true.

AN'NIUS OF VITERBO (GIOVANNI NANNI), 1432-1502; an Italian Dominican, a favorite of pope Alexander VI. and of that family; yet his death is thought to have been caused by poison, under command of Caesar Borgia, who was offended with A.'s plainness of speech. He published a spurious work pretending to be the writings of ancient authors whose books are lost.

ANNUNCIATION, THE. The announcement by the angel to the Virgin Mary of the incarnation of Christ (Luke i. 26-38). The festival of the A. is kept on the 25th of Mar., which was for a long period the beginning of the legal year in England. The earliest allusion to this feast is in a canon of the council of Toledo, 656 A.D. Chrysostom calls it "the root of all festivals." With a view to natural fitness, the framers of the church calendar placed the festival of Christ's nativity nine months after the A.

ANO'KA, a co. in e. Minnesota on the Mississippi river, 420 sq. mi.; pop. '80, 7005. Agricultural products and lumber are the staples. Co. seat, Anoka.

ANOLIS, a genus of saurian reptiles or lizards, native of tropical America, having teeth on the palate of the mouth as well as on the maxillary bones. They are remarkable for the power of inflating the skin of the throat, and for rapid changes of color of the inflated skin. They are entirely inoffensive, living on insects; are easily alarmed, and very rapid in their movements. There are several species, most of them bright green in color, varied with black.

ANOUKIS, or ANAKA, the "clasper" or "embracer;" an Egyptian goddess, personifying the lower world or hemisphere. She is represented with a red crown; while Sati, who personifies the upper world, has a white crown. A. seems to have been analogous to the Greek Hestia, or Vesta. No statues of A. have been discovered.

ANQUETIL, LOUIS PIERRE, 1723-1808; a French historian; director of the academy of Rheims, and author of a history of that city. In 1759, he was prior of the abbey de la Roe, in Anjou, and soon afterwards director of the college of Senlis; later still, prior of Chateau Renaud, near Montargis, which he exchanged for the curacy of La Villette, near Paris. In the reign of terror he was imprisoned in St. Lazare. He was an early member of the national institute, and employed in the department of foreign affairs. He left many historical works, for the most part crude and faulty in style.

ANSALO'NI, GIORDANO, a Sicilian Dominican missionary, who died under torture, Nov. 1, 1634, in Nagasaki, Japan, whither he had gone from the Philippine islands, after learning the Japanese language in a hospital at Manila. He labored two years as a priest before he was discovered. Another priest and 69 converts suffered death with him.

AN'SARIES, or ANSA'RIANS, called also Nossairians, an Arab sect living in the mountains between the n. part of Lebanon and Antioch; found also in Antioch and other towns and villages of the coast. Little is known of their origin or history. They endeavor to conceal their doctrines from strangers, and of their own people none but male adults are admitted to the secrets. But it is evident that their tenets are a mixture of paganism and Mohammedanism, with some faint suggestions from Christianity. Their founder, Nossair, who lived about 890, taught that God appeared eleven times in human form, to Abraham, Moses, Jesus, Mohammed, and others; that he always encountered opposition, whereupon he returned to heaven, wrapped himself in a blue mantle, and resorted to the sun, which is therefore an object of their worship. They are said, by some writers, to look for a messiah who will be the twelfth person of human form in whom God will appear. Other accounts are that they hold to seven manifestations of the supreme deity, of which Ali is the only one to be adored. They believe in migration of souls, which for the faithful will be a progress from pure to more pure until they become stars; but sinners will be transformed into Jews, Christians, donkeys, dogs, and hogs. They practice circumcision and ablution, and pray in the open air three times a day. Promiscuous intercourse of the sexes is practiced on certain festivals, and their religious rites are believed to be vile. Though their religion inculcates benevolence, honesty, and patience, they are thievish and superstitious, yet hospitable. Each community is governed by a mokaddem, who is almost entirely independent. It is said that the most numerous of the three sects into which the A. are divided worship a beautiful young woman, who is elected goddess once in three years. A late writer estimates their number at over 200,000, and says that they believe in a divine unity in three persons, the last two being created. The first, the supreme deity, is Manna or "meaning," the second Ism or "name," the third Bab or "dove." There is also a system of hierarchies wonderful for number; there are 14,000 "near ones," 15,000 "cherubim," 16,000 "spirituals," 17,000 "saints," 18,000 "hermits," 19,000 "listeners" and 20,000 "followers," besides prophets, apostles, and heroes. They profess to receive, among other sacred books, the Old and New Testaments, and the Koran.

AN'SCHÜTZ, KARL, 1813-70; royal musical director in Coblenz, and director in Nuremberg, Amsterdam, London, and New York, founding in the latter city the German opera, in 1862.

ANDELL, RICHARD, b. 1815; an English painter chiefly of animals and field sports. He painted "The Battle of the Standard," and worked in association with Creswick, the landscape artist.

ANSE DE PANIER, a French term for arches which are the result of elliptical curves in section; an elegant form for bridge arches.

ANSON, a co. in s. North Carolina, on the Rocky and Yadkin rivers, 650 sq. m.; pop. '70, 12,428-6951 colored. It has an undulating surface and productive soil; agriculture is the chief industry. Co. seat, Wadesborough.

ANSONIA, a village in the t. of Derby, Conn., on the Naugatuck river, 10 m. w.n.w. from New Haven; pop. '80, 3855. It is a place of manufactures, especially of clocks and brass work.

ANSPACH, ELIZABETH BERKELEY, Margravine of, 1750-1828; daughter of Augustus, earl of Berkeley, and wife of the earl of Craven, who d. in 1791, after which she

married the margrave of Anspach. She was highly accomplished, and of singular versatility, writing and performing dramas, and composing many biographical memoirs.

ANSTED, DAVID THOMAS, an English physician, b. 1814; educated at Cambridge, and professor of geology at King's college, London, and at the college of civil engineers at Putney. For many years he was engaged on works illustrating the application of geology to engineering and mining. He has a high reputation as a consulting engineer. Besides geological works he has published *Scenery, Science, and Art, The Channel Islands, Correlation of the Natural History Sciences, The Ionian Islands, and Physical Geography*.

ANSTER, JOHN, LL.D., 1798-1867; an Irish poet; educated at Trinity college, Dublin. In 1819, he published *Poems and Translations from the German*, which gained him the friendship of Coleridge, by whose advice A. completed a version of Goethe's *Faust*. He was called to the Irish bar in 1834, and was regius professor of civil law in Dublin university. Afterwards he published a second volume of *Poems and Translations*, and *Introductory Lecture on the Study of the Civil Law*.

ANSTEY, CHRISTOPHER, 1724-1805, an English poet; educated at Eton and designed for the church, but failing to get his degree, he returned to private life. He entered the army, and sat in parliament. Among A.'s works are the *New Bath Guide*, the *Election Ball*, and some others now forgotten.

ANTÆUS, in fable, a giant in Lybia, son of Poseidon (Neptune) and Terra (the earth). He compelled all strangers passing through the country to wrestle with him, but when he was thrown he received fresh strength from contact with his mother earth, and proved invincible. With the skulls of those whom he had slain, he built a temple to his father. Hercules discovered the secret of his renewal of strength, lifted him from the earth, and strangled him. This struggle is a favorite subject in ancient sculpture.

ANTAGONIST MUSCLES. Every muscle is opposed in its action by another muscle, or elastic ligament; e.g., in the arm the triceps extensor is opposed by the biceps flexor and brachialis anticus; the diaphragm, whose action aids in expanding the chest, is opposed by the external abdominal muscles. The diastole of the heart in vertebrates is best explained by elasticity, as it exerts very little power. The predominance of power in antagonist groups of muscles determine the position of different parts of the body when at rest, the naturally bent positions of the fingers during sleep showing the prevailing power of the flexors. The natural balance of muscles is sometimes disturbed by disease.

ANTANACLASIS, in rhetoric a figure in which a word is repeated in a sense different from its first use, to give additional force to the expression; as the remark of Benjamin Franklin when he was about to sign the declaration of American independence: "we must all hang together, or we shall assuredly all hang separately."

ANTARCTIC CURRENT, a drift, traceable first along the shores of Victoria land in the southern region of perpetual frost, which carries ice and cold water along the western coast of South America. It is much like the gulf stream, only the latter warms the cold n.w. of Europe, while the former cools the tropic heats of western South America.

ANTARCTIC LANDS, the unexplored space beyond 70° s. lat., comprising an area of about 4,700,000 sq. miles. The latest information and speculations about this region, laid before the British association, favor the supposition that there is no continuous Antarctic continent, but a congeries of low continental lands and islands connected by bridges of ice which form part of the solid ice cap covering the whole to the height of about 1400 ft. The region is intersected by continental chains, like the range between 55° and 95°, which includes Peter the great island, Alexandra land, Graham land, Adelaide island, and Louis Philippe land; also by at least one volcanic range, discovered by Ross in 1841, which stretches from Balleny islands to lat. 78° s., and reaches a height of 15,000 ft. The A. lands are surrounded by a fringe of ice, which extends in a perpendicular cliff of an average height of 230 ft., outside of which ice extends seaward in winter 20 ft. thick or more, and in summer this floe gives place to pack ice and drifting bergs. It is reasoned that the uniform height of the ice does not exceed 4400 ft., because any addition increases the pressure and lowers the mass which is melted away at the bottom by the internal heat of the earth. See POLAR EXPEDITIONS, *ante*.

ANTA'RES, a red star, thought by the ancients to resemble Mars. It is a double star, and the most conspicuous object in the constellation Scorpio. A. is often of use to navigators in finding longitude.

ANTELOPE, a co. in n.e. Nebraska; 864 sq.m.; pop. '76, 1303. Co. seat, Oakdale.

ANTE'NOR, the wise Trojan who advised his fellow-citizens to send Helen back to her husband. His friendliness to the Greeks became complete treason when the city was taken and his house was spared by the victors. Legends differ about him; one is that he built a city on the site of Troy; others make him the founder of various cities in Italy.

ANTHELMINTICS, medicines for destroying or expelling intestinal parasites; those which destroy are vermicides; those which expel, vermifuges. Among articles for the

purpose are senna, pink-root, santonin, oil of turpentine, oil of fern, and pumpkin and pomegranate seeds.

ANTHEMIUS, a Greek architect and mathematician, son of Stephanus, a physician, and one of five brothers, eminent as physicians, lawyers, and grammarians. It is supposed that A. anticipated Buffon in using burning glasses, and some say he knew the force of steam. He was eminent as an architect, and produced in 532, under the patronage of Justinian, the plans for the great church of St. Sophia, in Constantinople—plans which display great knowledge and great ignorance.

ANTHEMIUS, or **ANTHEMIUS PROCIPIUS**, a Roman emperor who reigned from 467 to 472. He was son-in-law of the emperor Marcian, and had been a favorite general of Leo, emperor of the east. His son-in-law, Ricimer, became A.'s enemy, proclaimed Olybrius emperor, and took Rome, putting A. to death.

ANTHONY, HENRY B., an American statesman, b. R. I., 1815; a graduate of Brown university, 1833; became editor of the *Providence Journal*, 1838, which position he held more than 20 years; in 1849 was elected governor of Rhode Island; re-elected in 1850 and declined further nomination for the office. He was elected U. S. senator in 1851; re-elected in 1864, '70, '76; was chosen president *pro tempore* of the senate in 1869, and again in 1871.

ANTHONY, SUSAN BROWNELL, b. Mass., 1820; one of the principal leaders of the "woman's rights" movement; daughter of a Quaker. She was a teacher in New York for 15 years, and was long distinguished for zeal and eloquence in the anti-slavery cause. She is still an eloquent advocate of total abstinence and woman-suffrage.

ANTHRACENE, or **PARANAPHTHALINE**, $C_{14}H_{10}$, a solid hydrocarbon accompanying naphthalene in the last stages of the distillation of coal tar. It has acquired great importance as the material from which alizarine is manufactured. A ton of A. can be obtained by the distillation of about 2000 tons of coal, besides the A. contained in the pitch. Pure A. occurs in bluish white foliated crystals, having a violet fluorescence. A little above $200^{\circ}C.$, it melts to a limpid liquid which rapidly becomes dark colored. It is not perceptibly volatile at 100° , but between 210° and 220° it sublimes easily, yielding a fetid and irritating vapor. It is soluble in boiling alcohol, and in light naphthas, from which it crystallizes out on cooling. Heated slightly with fuming sulphuric acid, it dissolves gradually, giving a greenish solution of sulphanthracene acid. A. has been made artificially from toluole and from benzole. See **ALIZARINE**.

ANTHRACITE, or hard coal, is mined in America chiefly from about 470 sq.m. in eastern Pennsylvania, where three parallel deposits occur in the counties of Dauphin, Schuylkill, Carbon, Northumberland, Columbia, and Luzerne. A. was found very early in the valley of Wyoming, and was used by smiths as early as 1768-69. In 1776, A. from near Wilkesbarre was floated down the Susquehanna to Carlisle, and was used in the government arsenal. A. was discovered at the Lehigh end of the Schuylkill coal-field by Philip Ginter, a hunter, in 1791, and a quarry was opened the same year. In 1803, 100 tons were brought from Summit hill to Philadelphia, and were sold to the city government for use in the pumping works, but the engineers did not know how to burn it, and it was broken up to gravel the walks in the yards. In 1812, two ark-loads were sold at the falls of the Schuylkill at \$21 per ton. A morning was wasted in futile attempts to burn this coal, and at noon the workmen and their employer, discouraged at their ill luck, shut up the furnace and went to dinner. On their return they were astonished to find a roaring fire, the furnace doors red-hot, and the furnace itself in danger of melting. From that day dates the successful use of A. in America. The development of this interest is shown in the following table:

THE ANTHRACITE COAL PRODUCTION OF PENNSYLVANIA, IN TONS OF 2240 LBS.

YEARS.	WYOMING REGION. Luzerne and Sullivan cos.		LEHIGH REGION. Carbon, Columbia, and Luzerne cos.		SCHUYLKILL REGION. Schuylkill, Northumber- land, Columbia, Dauphin, and Lebanon cos.		ALL THE RE- GIONS.
	Shipments.	Total prod't.	Shipments.	Total prod't.	Shipments.	Total prod't.	Total prod't.
1820	.....	10,000	.....	8,000	.....	5,000	18,000
1829	7,000	16,800	25,110	29,110	78,293	87,293	133,203
1839	122,300	146,760	221,025	265,230	454,538	545,446	957,436
1849	732,910	862,635	781,656	920,009	1,650,101	1,942,168	3,724,812
1859	2,731,226	3,151,846	1,328,311	1,879,071	3,448,708	3,979,809	9,010,726
1869	6,068,869	7,279,543	1,929,523	2,313,989	5,653,855	6,782,146	16,375,678
1879	12,575,000	13,800,000	4,550,000	4,825,000	9,125,000	9,670,000	27,825,000
	153,863,765	172,944,369	71,580,696	80,637,227	154,090,548	174,356,236	427,987,882

A. is the purest form of natural carbon, except the diamond. The carbon varies from 95 per cent in specimens picked from the best veins, to 80 or 85 per cent. Coal containing less than 80 per cent of carbon is not classed as anthracite. The volatile matter

present is water, oxygen, hydrogen, and nitrogen; the ash contains oxide of iron, iron pyrites, silica, alumina, lime, etc. Pennsylvania anthracites have usually 83 to 94 per cent of carbon, 1½ to 7 per cent of volatile matter, and 1¼ to 7 per cent of ash; the density varies from 1.4 to 1.63. A. was derived from bituminous coal by heat acting under great pressure, and probably caused by pressure in the geological changes which threw the anthracite regions, as in eastern Pennsylvania, into great mountain waves. The heat drove off all volatile matters which it would develop from the bituminous coal, and left the more stable material behind as a natural coke, differing from artificial coke only in its superior density. The loss of vegetable matter by decomposition in the formation of bituminous coal is estimated at about three fifths of the material, and in the production of A. at about three fourths; the added compression leaves the resulting bulk about one fifth or one eighth the original mass. It follows, then, that to produce a vein of A. 30 ft. thick, 240 ft. of vegetable matter must have existed. The coal deposits, as found in the A. formation near Pottsville in the Schuylkill valley, include 15 groups, with 30 beds or veins more than 2 ft. thick, and 20 seams less than 2 ft. The thickest, or mammoth vein, is a single bed from 20 to 70 ft. thick, in some places divided into 3 layers by seams of slate. About four fifths of the present production of A. comes from this vein. The aggregate thickness of the coal veins at this point is 113 ft., of which 80 ft. may be profitably mined. See COAL. The possibilities of the production of A. in America may be gathered from the following table, issued Jan. 3, 1880, by the *Engineering and Mining Journal*, and compiled by Richard P. Rothwell:

THE AREA AND CONTENTS IN COAL OF THE ANTHRACITE BASINS OF PENNSYLVANIA.

FIELD.	AREA.		Feet of coal.	QUANTITY OF COAL.		Per cent.
	Square miles.	Acres.		Per A., tons.	Total quantity, tons.	
Wyoming.....	185	118,500	19	34,580	4,097,730,000	36
Lehigh.....	43¾	28,000	20¼	36,855	1,630,120,000	9
Schuylkill.....	215	137,500	25	45,500	6,256,250,000	53
Total.....	373¾	284,000	22	40,084	11,384,100,000	100

FIELD.	Tons sold to end of 1877.	Tons mined, including waste.	Tons remaining.	Per cent.	Tons available, allowing waste	Per cent.
Wyoming.....	151,475,872	60 per ct waste. 378,689,680	3,719,040,320	36	50 per ct waste. 1,859,520,160	41
Lehigh.....	72,422,227	65 per ct waste. 206,910,302	823,209,698	08	60 per ct waste. 329,283,879.2	07
Schuylkill.....	157,776,236	65 per ct waste. 450,766,702	5,805,483,297	56	60 per ct waste. 2,322,193,318.8	52
Total.....	381,674,335	1,036,366,685	10,347,733,315	100	4,510,997,358	100

ANTHROPOLOGY (*ante*), the “science of man,” or natural history of mankind; in the general classification of knowledge, the highest section of zoology or the science of animals, which is itself the highest section of biology or the science of living beings. To A. contribute the sciences of anatomy, physiology, ethics, sociology, prehistoric archaeology; although each of these branches of investigation pursues its own subject, having no further contact with A. than when its research concerns man. It is the office of A. to collect and set forth, as completely as possible, the synopsis of man's physical and mental nature, and the theory of his course of life and action from his first appearance on the planet. Looking at man's place in nature, we see that the higher apes come nearest to him in bodily formation, and here it is the office of zoology to point out resemblances and differences, and to ascertain relations. “At this point,” says prof. Owen, in a paper on the bony structure of apes, “every deviation from the human structure indicates with precision its real peculiarities, and we then possess the true means of appreciating those modifications by which a material organism is especially adapted to become the seat and instrument of a rational and responsible soul.” Huxley, in comparing man with other orders of mammalia, decides—“There would remain then but one order for comparison, that of the apes, and the question for discussion would narrow itself to this: Is man so different from any of these apes that he must form an order by himself? Or does he differ less from them than they differ from one another, and hence must he take his place in the same order with them?” Here the reference plainly limits itself to the human body. Huxley compares man with the gorilla, which is on the whole the most man-like of all the apes. The gorilla has a smaller brain-case, larger trunk, shorter legs, and longer arms than man. The differences in the skulls are remarkably apparent. In the gorilla the face, formed largely by the massive jaw-bones, predominates over the brain-case; in man these proportions are reversed. In man the skull is set evenly on the spine, the spinal cord being just behind the center of the base of the skull; but in the gorilla, which usually goes on all-fours, the skull is inclined

forward and the spinal cord is further back. In man the surface of the skull is nearly smooth, the ridges of the brow having but slight projection, while in the gorilla these ridges are enormous. The capacity of the largest gorilla skull yet measured was but $34\frac{1}{2}$ cubic in.; that of the smallest human cranium is almost 63 in. The gorilla's large facial bones and great projection of jaws give its face a brutal expression, and its teeth differ from man's in size and in the number of fangs. The gorilla's arm is one sixth longer than its spine; man's is one fifth shorter. The legs differ not so much, but the hands and feet of the gorilla are longer than in man. The vertebral column and the narrow pelvis differ from those of man; the thumb is much shorter and the hand clumsier than man's. But a radical difference is in the amount of brain, that of the gorilla being 20 oz., while in man it is seldom less than 32. Prof. Huxley, restoring in principle the classification of Linnæus, would include man in the order of *primates*, and divide that order into seven families: 1, *anthropini*, consisting of man only; 2, *catarrhini*, or old world apes; 3, *platyrrhini*, including all new world apes except the marmoset; 4, *arctopithecini*, or marmosets; 5, *lemurini*, or lemurs; 6, *cheiromyini*, or bats; and 7, *galopithecini*, or flying lemurs.

In fixing man's place in nature on physiological grounds, much greater difficulty is met. There is here an enormous gulf between the most brute-like of men and the most man-like of apes; a chasm not to be accounted for by minor structural differences. The bold investigations and speculations of science have not yet been able to eradicate the opinion, deeply rooted in modern as in ancient thought, that only a distinctively human element can account for the wide severance between man and the highest animal below him. Mere mechanical differences do not explain the divergence. An ape with a man's hand and voice would still have to rise through a long structural growth to be indeed a man. The greater amount of brain in man comes nearer to explain the difference; but even that fails. In some of the senses man is quite inferior; he cannot equal the eagle in sight, the dog in scent, nor one of a dozen animals in hearing; though in the senses of tasting and feeling he may be superior to any of them. We must conclude that it is by superiority in quality, as well as in quantity, of brain, and, because of that superiority, by the possession of a highly organized language, that man has the power of co-ordinating the impressions of his senses, which enables him to understand the world in which he lives, and, by understanding, to use, resist, and rule it. This power of using what his senses reveal to him is clearly expressed by man in his language. He shares with beasts and birds the power to express feelings by emotional cries; the parrot approaches him in utterance; and by association of ideas, some of the lower animals understand to a certain extent what he says. But the abstract power of using words, in themselves meaningless, as symbols by which to convey complex intellectual processes—in which mental conceptions are suggested, compounded, combined, and even analyzed, and new ones created—is a faculty scarcely to be traced in any other animal than man.

That this power is a function of the brain has been fully proved in diseases of that organ, such as aphasia. This may stand among the best evidences that the brain is the principal, if not the sole, organ of mind. But animals of lower grade share with man in varying degree in many of the high attributes. Sudden terror affects man and beast alike; in both the muscles tremble, the breast palpitates, the sphincters are relaxed, and the hair stands up. Memory in some of its ranges in very strong in some animals, especially in elephants and dogs. Reasoning power is shown when the monkey breaks an egg softly and picks away the shell cautiously so as to preserve the entire contents. Monkeys also use mechanical defenses, throwing sticks and stones, and nuts from trees, at their enemies; and the wonderful mechanical instinct shown in nest-building by birds and insects must not be forgotten yet man rises above all this, and remains the only creature who is not subject to nature, but has knowledge and power to control and regulate his actions, and to keep in harmony with nature, not by a change of body but by an advance of mind. The lower instincts which tend mainly to self-preservation are weaker in man than in many other animals, while philosophy, seeking knowledge for its own sake; morality, manifested in the sense of truth, the right, and virtue; and religion, the belief in, and communion with, some spiritual being above man, are human characteristics, of which the lower animals show at most but the faintest traces. Yet the tracing of physical and even intellectual continuity between the lower animals and man need not lead the anthropologist to lower the rank of man in the scale of nature.

Modern materialists are content to regard the intellectual functions of the brain and the nervous system as all there is to be considered in a psychological comparison of man with lower animals. They hold that man is a machine—wonderfully complex, to be sure, yet only a machine, provided with energy by force from without—which mechanically performs the acts for which it was constructed, such as eating, moving, feeling, and thinking. But their views are strongly opposed by those who combine spiritualism and materialism in the doctrine of a composite nature in man; animal as to the body, and in some degree as to the mind, or, as some term it, the soul; spiritual as to the soul or, as some prefer to call it, the spirit. Dr. Prichard sustains the time-honored doctrine which refers the mental faculties to the operation of the soul. Mivart, the comparative anatomist, says: "Man, according to the old scholastic definition, is a 'rational animal,' and his animality is distinct in nature from his rationality, though inseparably joined during life in one common personality. Man's animal body must have had a different source

from that of the spiritual soul which informs it, owing to the distinctness of the two orders to which those two existences severally belong.' In this view not life only but thought also is a function of the animal system, in which man excels all other animals as to the perfection of organization; but beyond this, man embodies an immaterial and distinctively spiritual principle which no lower creature possesses, and which makes the resemblance of the ape to him merely superficial. It is not our business to decide upon these conflicting doctrines, each of which has the support of many names high in science and philosophy.

Concerning the origin of man, opinion is divided between the two great schools of biology—that of creation and that of evolution. The old doctrine of the contemporaneous appearance on earth of all animals was long ago set aside by the researches of geology, and it is admitted that the animal kingdom, past and present, includes a vast series of successive forms, appearing and disappearing in the lapse of ages. Our subject requires us to ascertain what formative relation subsists among these species and genera—the last link of the argument reaching to the relation between man and the lower creatures preceding him in time. Agassiz admits that there is a manifest progress in the succession of beings, an increasing similarity between the living fauna, and among vertebrates especially an increasing resemblance to man. But among the causes of this succession of types he does not include parental descent: "the link by which they are connected is of a higher and immaterial nature, and their connection is to be sought in the view of the Creator himself," whose ultimate aim, to which all creation and progress was made auxiliary, was to introduce man as the crown of his work. This is the "creationist view." But the evolutionist maintains that successive species of animals, though never so diverse in appearance, are really connected by parental descent, having become modified in the course of successive generations. Lamarck says "man is co-descendant with other species of some ancient, lower, and extinct form." Darwin's conclusion that man is the descendant from some animal of the *simian* (monkey) stock is well known, though his qualification that "we must not fall into the error of supposing that the early progenitor of the whole *simian* stock, including man, was identical with, or even closely resembled, any existing ape or monkey," is not so widely recognized. The problem of the origin of man cannot be properly discussed apart from the full problem of the origin of species (see SPECIES). The likeness between man and other animals which both schools try to account for; the explanation of any interval with apparent want of intermediate forms, which seem to the creationists so absolutely a separation between species; the evidence of useless rudimentary organs, such as in man the external shell of the ear, and the muscles which enable some men to move their ears (which rudimentary parts the evolutionists hold to be explainable only as relics of an earlier specific condition)—these, which are the chief points in the argument on the origin of man, belong to general biology. The theory of evolution tends towards the supposition of ordinary causes (such as natural selection) producing modification in species; the theory of creation has recourse to acts of supernatural intervention. A middle course is suggested by Mivart: that man's body belongs to natural evolution; his soul to supernatural creation. But this compromise, though it seems to be gaining adherents, thus far fails to satisfy either school. There is no question, however, that evolution, as a distinct theory, apart from all supposed connection with materialism, is securing the assent of scientists. We wait to see whether the discovery of intermediate forms will go on till it produce a disbelief in any real separation between neighboring species, and especially whether geology can furnish traces of the hypothetical animal which was man's nearest ancestor, while not yet man.

Coming to look into the antiquity of man, we remember that it is only a few years since English-speaking people very generally accepted the chronology of archbishop Usher, and agreed, without investigation and almost without question, that the earth and all that it contains was created 4004 years before the advent of Christ. That and all other known systems of chronology, as fixing the date of the earth's origin, have been entirely overthrown by geological and astronomical facts; and even as fixing the date of man's origin they have been with great force called in question, and by many investigators positively rejected. These last assert that it is useless to speculate as to years or even ages in order to fix dates. The asserted discovery of human bones and articles manufactured by men in strata holding the remains of the fossil species of elephant, rhinoceros, etc., would, unless disproved, inevitably lead to the inference that man existed during the life period of those animals. Further evidence has been found that seems to take man back to the quarternary or drift period; and such evidences are generally accepted by geologists as carrying back the existence of man at least into the period of the post-glacial drift, in what is now called the quarternary period, indicating an antiquity at the very least of tens of thousands of years. The 20 centuries of English and French history are counted but as a mere fraction of the time that has elapsed since the stone implements of prehistoric tribes were buried under beds of gravel and sand by the rivers now known as the Thames and the Somme. If we consider the geological formation of such valleys as those in which these rivers flow, and estimate from present data the time required for the rivers to dig such valleys, it follows that the drift beds and the men whose works they inclose must have had existence at a period so remote that any comparison with the received chronology of years and centuries is

impossible, and the attempt to fix dates would be absurd. For the present we must be content to begin with "Once on a time." Still, certain inferences have been drawn that may be noted. A boring of 90 ft. in the Nile valley, reached pottery and burnt brick, showing that man in a fairly civilized state dwelt there so long ago that, at the rate of deposit by the river, it must have been several thousands of years. The lake dwellings of Switzerland—huts in number amounting to villages, built on piles in the water at some distance from the shore for safety against attack—indicate very remote antiquity; and the same may be said of the Danish remains of fire-places, or kitchen refuse heaps. Extant chronicles must also be noted. The oldest written records are hieroglyphic inscriptions, and the oldest can be hardly less, and may probably be much more, than 3000 years earlier than the Christian era. It is certain that more than 4000 years ago the Egyptian nation occupied a high plane in industrial, social, and political culture. The inscribed bricks of temples in Chaldea are of a date earlier than 2000 B.C., and Chinese civilization can be certainly traced back to a period anterior to 2000 B.C. Until recently it was the common opinion that the early state of society was one of comparatively high culture; but now the opinion is paramount that whatever may have been the earliest state, all recorded human civilization has been gradually developed from a state of barbarism. This hypothesis makes it necessary, it is claimed, to add 4000 to 5000 years to the earliest dates for Egyptian, Babylonian, and Chinese civilizations as generally traced. It is claimed, also, that much further time should be allowed during which the knowledge, arts, and institutions of these countries attained the level at which we fix their earliest dates. This view is thought to be strongly corroborated by philology. Hebrew and Arabic are closely related languages, neither of them being the parent of the other, but both the offspring of some earlier tongue. Therefore, when the Hebrew records have taken back to the most ancient admissible date the existence of the Hebrew language, this date must have been long preceded by that of the extinct parent language of the whole Semitic family; while this again may be considered to be the descendant of languages slowly shaping themselves through ages into this peculiar type. The evidence of the Aryan, or Indo-European, family of tongues is advanced as still more striking. The Hindoos, Medes, Persians, Greeks, Romans, Germans, Kelts, and Slavs make their appearance at dates more or less remote, as nations separate in language as in history. Nevertheless, it is now generally believed that in some high antiquity, before these nations were divided from the parent stock and distributed over Asia and Europe by the Aryan dispersion, a single barbaric people stood as physical and political representative of the nascent Aryan race, speaking an Aryan language, now perhaps extinct, from which, by a series of modifications not to be estimated as possible in any brief period, there arose languages which have been mutually unintelligible since the dawn of history, and between which only an age of advanced philology could trace the fundamental relationship. Combining these considerations, we find the basis claimed for the hypothesis that the furthest date to which writing, or rock inscriptions, or language, extends, is to be regarded as but the earliest distinctly visible point of the historic period, beyond which stretches back the unknown series of prehistoric ages. Advocates of the old chronology, while calling attention to the fact that many of these assertions are as yet hypotheses awaiting proof—and that some of the most important of them can be substantiated only on an ascertainment that present rates of geological formation and linguistic construction exactly decide the rate of progress under perhaps extremely diverse conditions in an unknown past—are yet not unready to concede that the old chronology must be regarded as uncertain in its starting-point, as well as indefinite in its terms, and as leaving gaps which are to be filled by an increasing knowledge. They demand, however, that these deficiencies be left unfilled until the undeniable facts are in hand for that purpose; and that till then, no merely probable hypothesis be accepted as of final authority. It should be observed that the Bible is not, as is commonly supposed, responsible for archbishop Usher's chronology. That system is, of many possible systems equally accordant with the Bible, the one which has gained the widest acceptance.

In classifying the races of mankind, a number of systems have prevailed. The color of the skin is the first striking difference in showing race, and this distinction is found in ancient Egyptian portraits, and writers, ancient and modern, speak of white, yellow, and black races. The structure and arrangement of the hair is a better indication of race than the tint of the skin. Stature is an uncertain guide, for there are short and tall men in all races; still, an average rate of stature may indicate descent, and it is noteworthy that people of Keltic origin in Great Britain are shorter than those of Teutonic descent (see ANTHROPOMETRY). The conformation of the skull has been used also, and careful measurements of form and capacity have been made; but shapes of the skull vary so greatly even in the same tribe, as to render this method of determining race practically worthless. The features, or general contour of the face, being at once apparent to the eye, are much used by scientific observers to determine race. Some of the most notable features, in contrast with European types, are seen in the oblique eyes of the Chinese, the pointed Arab chin, the Kirghis snub nose, the fleshy lips of the negro, and the broad ears of the Kalmuk. In Europe and America the Hebrews are distinguished by their peculiar features, and some physiognomists will undertake to select almost any nationality by mere examination of faces. The adaptation of a people to its climate forms a definite race-character, and typical instances of the relation of race-constitutions to particular

diseases are seen in the liability of Europeans in the West Indies to yellow fever, from which, as has been thought, though scarcely proved, negroes are commonly exempt. Even the vermin infecting different races of men have been classified. Physical capabilities of races differ widely; but as the same is true of individuals of all races, such differences can hardly be used for race-classification. Two strongly marked mental contrasts are found in the shy and impassive Malay and the sociable and demonstrative Papuan. Classifications by race have been numerous, but all more or less imperfect, and some worthless. Blumenbach's "five races" is a widely known classification: Caucasian, Mongolian, Ethiopian, American, and Malay. Pickering made 11 races, Bory de St. Vincent 15, and Desmoulins 16; but no modern naturalist would accept any of these classifications. On the whole, probably Huxley's scheme more nearly than any other approaches to a classification that may be accepted in definition of the principal varieties of mankind, regarded from a zoological point of view. He makes four types: 1. The *Australoid*; chocolate-brown skin, dark brown or black eyes, black hair, narrow skull, brow-ridge strikingly developed, projecting jaw, coarse lips, and broad nose. This type is best represented by native Australians, and the coolies of southern India. 2. The *Negroid*; chiefly the negroes of Africa; with dark brown to brown-black skin, eyes of like hue, hair usually black, crisp, and wooly; skull narrow, but orbital ridges not prominent, jaws projecting, nasal bones depressed, and thick lips. 3. The *Mongoloid*; prevailing over the area east from Lapland to Siam; of short build, yellowish-brown skin, black and straight hair, black eyes, broad skull, brow-ridges usually not prominent, small flat nose, or eyes set obliquely. 4. The *Xanthochroi*, or fair whites; skin almost colorless, blue or gray eyes, hair from straw color to chestnut, and skull large though variable in size. To these four general divisions he adds *Melanochroi*; much like the fair whites, but of smaller stature and darker shade of hair, eyes, and skin—such as the Kelts, the people of southern Europe, the Greeks and Arabs.

On the origin of races there has long been, and still continues, an earnest discussion. On one hand, it is claimed by monogenists that all men descended from a single pair; on the other, it is contended by polygenists that there were many primary species of separate origin. The monogenists rest upon the Bible, and point to Adam and Eve; the polygenists, while arguing from science, with equal confidence, show biblical passages from which they infer the existence of contemporaneous non-Adamite races; and even political science was called in to support the idea of more than one original race, when the institution of slavery in the United States was defended on the assumption that the negroes were a different race, inferior to the whites or the Indians. We do not enter into even a statement of the many variations of the human type, but observe that the general tendency of the evolution theory is against constituting separate species where the differences are moderate enough to be accounted as due to variations from a single type; while it is not inconsistent with evolution to claim that several distinct simious species may have culminated in several races of men. Still the drift of the evolution theory is towards unity of origin. Darwin says: "When naturalists observe a close agreement in numerous small habits, tastes, and dispositions, between two or more domestic races, or between nearly allied natural forms, they use the fact as an argument that all are descended from a common progenitor, who was thus endowed; and consequently that all should be classed under the same species. The same argument may be applied with much force to the races of man." The experience of the last few years countenances Mr. Darwin's prophecy, that before long the dispute between those who hold that all men came from one pair and those who hold to diverse originals, will die a silent and unnoticed death. [Portions of this article are, with modification, from *Encyclopædia Britannica*, ninth edition.]

ANTHROPOLOGY, besides its scientific application above noted, is used in theology to indicate the study of man in his relation to God. Under this head, some writers have practically brought almost all theology under discussion. Perhaps the prevalent usage may be said to limit A. to a study of theological facts or principles in their relations to man considered psychologically—or to man considered as to the origin of his complex being, and as to the interaction of his spiritual and material elements.

ANTHROPOMETRY (the measurement of man), of late years much attended to by anthropologists, foremost among whom is Dr. A. Weisbach, chief physician to the Austro-Hungarian hospital in Constantinople. His measurements refer to 19 different peoples and more than 200 individuals from all parts of the earth, and take cognizance of the pulse, the length of the body, the circumference of the head, the height and length of the nose, as well as the comparison of the length of the arm and bones with each other. Thus, for example, the number of pulse-beats per minute varies within wide limits; the Congo negroes, 62, and, next to them, the Hottentots and Roumanians, 64, have the slowest pulses. Then follow the Zingani, 69; Magyars and Kafirs, 70; north Slavs, 72; Siamese, 74; Sundanese and Sandwich islanders, 78; Jews, Javanese, and Bugis, 77; Amboinese and Japanese, 78; and lastly, the Chinese, 79. The quickest pulses belong to the Tagals, 80; the Madurese and Nikobars, 84. As to height, the smallest among the peoples measured are the Hottentots, 1286 millimeters; this is far below any other people, as the next, the Tagals, are 1562. Then follow the Japanese, 1569; the Amboinese, 1594; Jews, 1599; Zingani, 1609; Australians, 1617; Siamese, 1622;

Madurese, 1628; south Chinese, 1630; Nikobars, 1631; Roumanians, 1643; Sundanese; 1646; Javanese, 1657; Magyars, 1658; Bugis, 1661; north Slavs, 1674; north Chinese, 1675; and Congo negroes, 1676. The longest measurements, however, are found among the Sandwich islanders and Kanaks, 1700 millimeters; Kafirs, 1753; and the Maoris of New Zealand, 1757. To compare these with European peoples as to stature, we find that that of the English and Irish is 1690 millimeters; the Scotch, 1708; Swedes, 1700; Norwegians, 1728; Danes, 1685; Germans, 1680; French, 1667; Italians, 1668; and, lastly, Spaniards and Portuguese, 1658. The greatest circumference of the head is found among the Patagonians, 614 millimeters, and Maoris, 600. Following these are the Kafir, 575; Nikobars, 567; north Slavs, 554; Congo negroes, south Chinese, and Kanaks, 553; Tagals, Sundanese, and Roumanians, 552; Japanese, 550; Bugis and Jews, 545; Amboinese, 544; Javanese, 542; Hottentots, 540; and, lastly, the Zingani and Siamese, 529. Stature and circumference of head generally stand to each other in opposite relations; although there are exceptions, as in the case of the Siamese with small stature and small head, and the Patagonians with great height and large heads. The breadth of the root of the nose is found greatest among the Patagonians, 41 millimeters; less among the Congo negroes, 36; Australians, Maoris, and south Chinese, 35; Sundanese, Amboinese, Bugis, Nikobars, Tagals, and Kanaks, 34; north Chinese, Kafirs, north Slavs, Roumanians, Magyars, and Zingani, 33; Jews, Japanese, Siamese, Javanese, and Hottentots, 32. The Jews and Patagonians excel in length of nose, 71 millimeters. Following these are the Kanaks, 54; Roumanians, 53; north Slavs and Maoris, 52; Tagals, 51; Japanese and north Chinese, 50; Siamese, Magyars, Zingani, Madurese, 49; Amboinese, 48; Nikobars, 47; Sundanese, Javanese, south Chinese, Kafirs, 46; Hottentots, 44; Congo negroes, 42; Bugis, 41; and Australians, 30. The breadth of the nostrils gives quite another arrangement. Here we find the Australians excel, 52 millimeters; then come Congo negroes, 48; Kafirs and Patagonians, 44; Tagals, 42; Nikobars, 41; Hottentots and Sundanese, 40; Malay races, 39; south Chinese, 37; north Chinese, 36; Japanese, north Slavs, Roumanians, Zingani, 35; Magyars and Jews, 34. With regard to the bust, it is found that the North American Indians and the Polynesians excel all others in size. Next to them come the north, middle, and east Europeans; after them come the west Europeans, negroes, and after them the south Europeans, who are followed by the east Asiatics and Malays. Among European peoples, in respect of race, we find the narrowest chests among the Semites, followed in order by Romanee, Kelts, Fins, Zingani, Germans, and Slavs. Interesting results are obtained by comparison of the length of arm and the leg-bones. Among east Europeans the leg-bones throughout are longer than the arm; among Australians, Polynesians, and especially east Asiatics and Patagonians, the leg-bones are shorter than the arm; among Africans, only, the Congo negroes have the leg-bones longer than the arm. See ANTHROPOLOGY.

ANTICLIMAX, in rhetoric, an abrupt declension by a writer or speaker from the dignity to which his idea has attained; as in the lines,

"The king of France, with twenty thousand men,
Marched up the hill—and then marched down again."

It is intentionally employed in ridicule or satire. Sometimes it partakes of the nature of antithesis; as, "Die; and endow a college, or a cat."

ANTICLINAL AXIS, a geological term denoting an imaginary plane of division between those portions of a stratum which dip in opposite directions downwards from a ridge lying between them.

ANTICYRA, a city of Phocis on the Corinthian gulf. The people were expelled by Philip of Macedon, and subsequently it fell under the Romans. The site is yet discernible, and is known as Aspra Spitia, or the white houses.—Another A. was a city of Thessaly, famous for producing hellebore, which was deemed a cure for madness.

ANTIE'TAM, BATTLE OF, Sept. 17, 1862; one of the most important conflicts in the war of the rebellion in the United States, 1861-65. The name is taken from a small but deep river in Maryland, emptying into the Potomac, 6 m. above Harper's ferry. The battle was the result of an attempt of the confederates to capture the city of Washington, in the expectation that Maryland would then join their cause and insure final victory. The federal army was commanded by gen. George B. McClellan, and the confederates by gen. Robert E. Lee. On the 4th, 5th, and 6th of Sept., the confederates crossed the Potomac near Leesburg, and occupied Frederick and the country along the Monocacy. McClellan threw a part of his army between them and the fords of the Potomac, forcing Lee to leave Frederick on the 12th, the latter marching towards Hagerstown. On the 10th "Stonewall" Jackson, the confederate general, had moved by forced marches towards Harper's ferry, which important position with 12,000 men surrendered to him on the 15th. Meanwhile the federal army followed Lee towards the north, and on the 14th took Crampton's gap and the heights of South mountain, forcing Lee to retreat over the Antietam to Sharpsburg. On the 16th the federals under gen. Hooker gained advantage in a sharp engagement, and on the 17th the real battle was begun by Hooker, who drove back the left wing of the confederates under Jackson, while gen. Burnside engaged their right wing. The battle raged around a corn-field surrounded by woods, to which

Hooker had driven the enemy. The federal troops were twice repulsed, but gained the position on the third attack. Hooker was wounded, and the command fell to gen. Sumner. Meanwhile on the extreme left Burnside had twice unsuccessfully tried to cross the A., but at 3 p.m. drove the enemy until a range of hills occupied by batteries checked him. At 4 o'clock he was ordered to take the position at any cost, and took the first battery. But the arrival of gen. A. P. Hill's division strengthened the confederates, and Burnside reported that he could not hold his position if not assisted by McClellan with the federal reserve. McClellan did not heed this demand, and the federals were driven back to the bridge, which the confederates declined to attack. When darkness ended the contest, the federals had gained advantages at most points, but not a decided success. In the morning Lee asked and was granted a truce to bury the dead, and while this was going on he retreated to the right bank of the Potomac, without serious resistance. The federal force numbered 87,164, and that on the other side is variously stated from 40,000 to 90,000. The federal losses were 2010 killed and 10,459 wounded; the confederate losses have never been ascertained, though some of their writers put 9000 as the total. The result was to put the confederates on the defensive, and to hasten the emancipation proclamation, then contemplated by president Lincoln.

ANTIGO'NISH, a co. in n.e. Nova Scotia; 500 sq.m.; pop. 71, 16,512. Coal is one of the chief products. The capital of the same name; pop. 4000.

ANTIG'ONUS DOSON, son of Demetrius, great-grandson of Alexander the great. He became regent or king of Macedonia during the minority of his cousin Philip, 229 B.C. As general-in-chief of the Achæan leagues he gained victories over Cleomenes of Sparta and his allies in the Peloponnesus. He d. in 221 B.C., leaving the throne to Philip.

ANTILEGOM'ENA, a name given by the early Christian writers to those books of the New Testament which, though sometimes read in the churches, were not for a time admitted to be genuine or received into the canon of Scripture. They were: epistle to the Hebrews, epistle of James, second epistle of Peter, second and third epistles of John, epistle of Jude, and the book of the revelation of John.

ANTI-LIB'ANUS, or ANTI-LEBANON, a mountain ridge in Palestine and Syria, about 90 m. long, running n.e. and s.w. nearly parallel with the Lebanon ridge, from which it is separated by the valley of Cælo-Syria. Mt. Hermon is the highest peak, 9000 or 10,000 ft., on whose sides rises the river Jordan. The A-L. is lower than the Libanus range, and less continuous.

ANTI-MASONS, the name of a political party in New York and other states, organized in 1827-28. It was the result of a remarkable excitement over the fate of William Morgan, a tailor of Batavia, N. Y., who was said to be about to publish, or betray, the secrets of the masonic order, of which he was a member. He disappeared suddenly, and his fate has never been satisfactorily explained. There was a search, and he was traced to the Niagara river, near which it was discovered that he had been temporarily in prison. The opponents of freemasonry declared that he had been murdered, and sunk in the river or lake. Legal inquiries followed, but proved nothing. At or about that time the governor of the state was a mason of the most advanced degrees, and probably a majority of all public officers were members of the order. A wild excitement grew up in western New York, and the anti-masonic party was formed, casting 33,000 votes in 1828, about 70,000 in 1829, and 128,000 in 1830, though many in the latter year were anti-Jackson men, without reference to masonry. In 1832, the party nominated William Wirt for president, but carried only one state, Vermont. In 1835, through a democratic split, they elected the governor of Pennsylvania. After this the party fell as rapidly as it rose, and has not since made any conspicuous figure in politics. A great majority of the anti-masons became members of the whig party.

ANTINOMY, the word used by Kant to mark the inevitable conflict or contradiction into which, in his view, the speculative reason falls with itself when it seeks to conceive the complex of external phenomena, or nature, as a world or cosmos. Literally, the word means a conflict or opposition of laws. It is used by Kant both in a generic, and in a specific sense; the necessity that lies upon the speculative endeavors of human reason taking the form of four special contradictions. For the generic sense Kant also has the word Antithetic, each antinomy being set forth in the shape of thesis and antithesis, with corresponding demonstrations, the perfect validity of which, in all cases, he positively guarantees. Briefly, his theses are: The world (1) is limited in space and time, (2) consists of parts that are simple, (3) includes causality through freedom, (4) implies the existence of an absolutely necessary being. Over against these stand the antitheses: The world (1) is without limits in space or time, (2) consists of parts always composite, (3) includes no causality but that of natural law, (4) implies the existence of no absolutely necessary being. Kant overcomes these antinomies by showing that the contradiction is not real if critically considered with due discrimination between noumena and phenomena. Sir William Hamilton's view, in his *Philosophy of the*

Conditioned, is not the same as Kant's theory of A., though a connection is traceable between the two.

ANTIOCH COLLEGE, at Yellow Springs, Green co., Ohio, was incorporated in 1852, and opened to students in 1853. Its buildings, erected at a cost of \$150,000, occupy a pleasant, healthful site. Much of its endowment was received from Unitarians. Its founders designed to afford the means of a sound education at the least cost, and that its teaching should be religious, without being sectarian. Both sexes are admitted, and their co-education has proved satisfactory. Some of its lady graduates have taken high rank as teachers in other institutions. Its presidents have been Horace Mann, LL.D., 1852-59; Thomas Hill, D.D., 1859-62; Geo. W. Hosmer, D.D., 1866-72; Edward Orton, PH.D., 1872-76; Samuel C. Derby, the present incumbent. The whole number of instructors is 10. The average number of pupils in all departments for seven years past has been about 170. Free tuition is offered to one young man and one young woman, annually, from each of the high-schools in Ohio.

ANTIOQUIA, one of the United Colombian states, between 8° 9' and 5° 3' n., and 74° 3' and 76° 13' w.; 22,316 sq.m.; pop. '71, 365,974, of whom about one fifth are white, the remainder being mestizos (or white and Indian mixed), mulattoes, and Indians. The Andes spread over nearly all the state. The Magdalena river forms the eastern boundary, and is navigable for light draft steamers. The river Cauca flows through the state. A. is rich in gold mines, has a fertile soil, and is prolific in cattle. Iodine springs are common, and useful in preventing goitre, which prevails in some of the states. Capital, Medellin.

ANTIPAS. See HEROD ANTIPAS, *ante*.

ANTI-RENTERS, a political party, which, in the four years between 1843 and 1847, made much commotion in that part of the state of New York comprised in the counties of Albany, Columbia, Delaware, Greene, and Rensselaer. In these counties land had been royally granted in the old colonial times to "lords of the manor," who were usually called "patroons." The tracts of land so granted were enormous in extent, and they had made leases in perpetuity, with the ground-rent payable generally in "kind," in corn, grain, skins of animals, and products of the soil or chase. As civilization extended and population increased, such a possession of their lands by tenants in this nature of feudal possession grew irksome to them. While nominally owning their farms they were not the real owners. From complaining, the tenants turned to resisting, and especially upon farms which were handed down through families from generation to generation, until finally the tenants in those counties which have been named banded themselves in associations, in order to attempt to break their leases. Their appeals to the law courts were, however, ineffectual. Then the question entered into the domain of politics, as it has similarly entered in Ireland and England. Great meetings were held in these counties. Agitators who had no particular interest in the anti-rent questions, as well as tenants who had the greatest interest, organized and addressed these meetings, at which there was more or less "sedition" and much rash talking, perhaps natural under the circumstances. Sometimes tenants would refuse to pay even a nominal rent or to recognize the "landlordism" in their cases, and then, of course, resort would be had to the courts for eviction procedures, to which there would be resistance. From legal resistance the tenants went on to armed and belligerent resistance. They would dress like Indians and disguise their faces with paints, and then seize the deputy-sheriffs, who came to serve process of eviction, and tar and feather them. In one or two instances extreme violence was resorted to, and all this resistance led to the passage of a statute against men appearing in public in disguise.

During the summer of 1845 some alarming outrages were committed by "Indians" of the anti-rent associations in Columbia county, and the law to prevent people appearing disguised and armed did not have the effect to prevent the outrages. A deputy-sheriff was shot at and wounded. Dr. Boughton, one of the most active agents in exciting these disturbances, was arrested and brought to trial, but the jury would not agree to convict him. On a second trial, however, Boughton, or "Big Thunder," was convicted and sentenced to the state prison. In Delaware and Schoharie counties frequent riots occurred, and finally, Aug. 7, Mr. Steel, a deputy-sheriff, while engaged in the discharge of his official duties, was attacked by an armed party and murdered in the open daylight. Then martial law was proclaimed in the district; several persons were convicted and sent to the state prison, and two were sentenced to be hanged. The death penalty was afterwards commuted by governor Wright for confinement in the state prison for life, and eventually, when the troubles were all ended, they were released. It was two or more years later before the disturbances were suppressed; and, when order was restored, gov. Wright recommended for the relief of the tenantry: 1, that distress for rent accruing on all leases executed in future shall be abolished; 2, taxing the landlord for his income by means of rent; 3, that the duration of the time of all leases to be executed should be restricted to 5 or 10 years. Soon afterwards the legislature acted upon the first of these recommendations; the landlords entered more or less into compositions, and the constitution of 1846 forbade agricultural leases in which were reserved rent or service of any kind during a longer term than 12 years. The A.-R. quickly merged into the great political parties of the period.

ANTI-SABBATA'RIANS, those who recognize no obligations to observe either the Jewish Sabbath, or the Christian Lord's day, deeming one day as sacred as another.

ANTISA'NA, a volcanic peak of the Andes, in Ecuador, 35 m. s.e. from Quito; 19,279 ft. high. There have been no eruptions for many years. On the side of A. is lake Mica, near which is a hamlet, which is one of the highest inhabited places on the earth, variously reckoned at 13,300 to 13,465 ft. above sea-level.

ANTI-SLAVERY SOCIETY, THE AMERICAN, organized in Philadelphia, Dec., 1833, by delegates from the few state or city societies in the United States. The first A. S. was formally organized in Boston, Jan. 6, 1832, William Lloyd Garrison being the leader of the movement. The American A. S. took the boldest ground in favor of the abolition of slavery, and its work was for many years looked upon as fanatical, or at least hopelessly impracticable. The presidents were Arthur Tappan, Lindley Coates, William Lloyd Garrison, and Wendell Phillips, and among its minor officers and most active friends were Beriah Green, John G. Whittier, Oliver Johnson, Lucretia Mott, Abby Kelley Foster, Gerrit Smith, Charles C. Burleigh, Samuel J. May, Francis Jackson, and William Jay. For many years the members of the society were denounced by almost every press in the country; their meetings were broken up by violence, and rewards were offered, in the south, for the assassination of their leaders. But the A. S. was both zealous and persistent, and many of its earliest members lived to find in the adoption of the 13th amendment to the national constitution, a proper time for its formal disbandment, which took place April 9, 1870.

ANTISTROPHE, a stanza or portion of a poem following the strophe, and responding to it. Or when the same word or phrase is used both at the beginning and end of a clause or sentence; as,

"Fare thee well; and if forever,
Still forever fare thee well."

In the Greek drama the A. is an important part of the chorus.

ANTI-TAURUS, a mountain range in Asia Minor, extending eastward from the Bosphorus, nearly parallel to the Black Sea. The name implies "over against the Taurus," the latter extending along the coast of the Mediterranean.

ANTOINE DE BOURBON, Duke of Vendôme, who married in 1548 Jeanne d'Albret, only child of Henry II. of Navarre, by whom he was the father of Henry IV.

ANTO'NIDES, HANS (Jan Van der Goes), 1647-64; a Dutch poet. He was of humble origin, educated at the expense of one of the lords of the admiralty at Amsterdam, and received the degree of doctor of physic. He is best known by his poems and a tragedy written at the age of 19, called *Trazil, or the Conquest of China*. His fame was fully established by *Y-Stroom*, an epic on the river Y.

ANTO'NIO, NICOLAS, 1617-84; a Spanish bibliographer and critic. In 1659, Philip IV. made him his general agent at the court of Rome, where he remained 18 years, and employed most of his time on his great work, which was a complete list of Spanish authors and a catalogue of their writings. He published part of it in 1672 under the title *New Spanish Library*, and in 1696 the *Old Library* appeared. About 1677, he was fiscal for the royal council in Madrid. His *Bibliotheca Hispana* is considered by some critics the best work on Spanish literature. He also wrote a critique on fabulous histories.

ANTO'NIUS, MARCUS, b. 143, killed 87 B.C.; commonly called "the orator;" one of the most eloquent of Roman lawyers and speakers. He was the grandfather of Mark Antony, the triumvir. In 103 he obtained the government of Cilicia, with the title of proprætor, and in 99 became consul. He favored the aristocratic party, and was an adherent of Sulla in the civil war against Marius, by whose order he was assassinated. In the judgment of Cicero, Marcus A. and L. Crassus were the first Roman orators who equaled the great speakers of Greece.

ANTONOMA'SIA, in rhetoric, the substitution of any epithet or phrase for a proper name; as, "the Stagyrite," for Aristotle; "the little corporal," for Napoleon; "the man on horseback," for Grant, etc. Sometimes the process is reversed; as, calling a good orator a "Cicero." In both cases the figure is akin to metonymy.

ANTRIM, a co. of Michigan, in the n.w. part of the lower peninsula, on Grand Traverse bay; 700 sq.m.; pop. '74, 3240. Farming is the main business. Co. seat, Elk Rapids.

ANVIL, an iron block, with a smooth, flat, steel face, on which malleable metals are hammered and shaped. A.'s are of all sizes, from the tiny articles used by watchmakers to the immense masses for trip-hammer work in great iron foundries. The common A. of blacksmiths has a cone or horn at one end, and a socket for a chisel in the other. The best A.'s are made of cast iron, faced with steel, the steel being placed at the bottom of the mold and the iron poured upon it.

ANZIN, a t. in the dept. of Nord, France, on the Scheldt, near Valenciennes, in the center of a most valuable coal-mining district. A. has iron foundries, glass-works, breweries, and distilleries. Pop. 7283.

AO'NIA, a district of ancient Greece, in which are Mt. Helicon (the Aonian mount) and the fountain Aganippe. In fable, A. was a favorite haunt of the muses, who were called "Aonides."

APA'CHES, Indians of Mexico, New Mexico, and Arizona; warlike nomads, roaming over Texas and the Mexican states. They wander and fight on horseback, and are usually at enmity with white men, resisting all efforts to Christianize or civilize them. Very few ever cultivate the soil, their living being derived chiefly from the chase and from robbery.

APHANIP'TERA, or APHANOPTERA, a term applied to an order, sub-order, or family of wingless insects, composed of various species of fleas, forming the family pulicidæ, and closely allied to the flies. The common flea may be considered a type. Another is the chigoe of South America, an insect whose burrowing in the flesh produces troublesome ulcers.

APHTHA. See ΑΡΤΗΛΑ, *ante*.

APLANATIC LENS, an achromatic lens corrected for spherical aberration, so that all rays of light which emanate from one point and pass through the lens, are focused at a point. For this purpose the curves of a telescopic lens should be parabolic rather than spherical, and the figure is obtained by delicate hand-polishing. For microscopes and photographic cameras two or more lenses are so shaped that the errors of each are mutually neutralized. This important problem, although difficult, is practically solved by modern opticians.

APOCALYP'TIC LITERATURE, alleged prophecies, epistles, etc., of late Jewish, and early Christian origin, written or compiled in or near the two centuries preceding and the two following the birth of Christ. Of the Jewish, the most famous is the *Book of Enoch*, quoted in the epistle of Jude, long lost, but found in Ethiopia and published in 1821. It gives an account of the fall of the angels, their intercourse with the daughters of men, and the birth of giants; Enoch's troubles in heaven and earth, attended by angels who explain the mysteries of the worlds, visible and invisible; descriptions of heaven, of the Messiah, of the future of the blessed, and of the condemned; accounts of the sun, moon, and stars; visions tracing the history of man from his origin to the completion of the Messianic kingdom; admonitory discourses; the wonders that were shown at Noah's birth, and Enoch's reflections about the future of the just and the unjust. In all, it is an interesting product of pre-Christian Judaism, multifarious, artificial, and rabbinical. The *Fourth Book of Esdras*, or the *Prophecy of Ezra*, consists of a series of visions attributed to that prophet, and relating chiefly to the oppression of the Jews. The *Book of the Jubilees*, or the *Little Genesis*, is only in part apocalyptic. It contains, in the form of revelations to Moses while he was on Mt. Sinai, statements relating to future races and times. The work was written about 100 B.C. The *Life of Adam*, the *Book of Adam's Daughters*, the *Assumption of Moses*, the *Apocalypse of Moses*, the *Sibyllines*, and the *Apocalypse of Baruch*, complete the list of noteworthy Hebrew works of the kind under consideration. The *Sibyllines* were doubtless suggested by the Grecian oracles and books under that name. The Christian A. works are: the *Apocalypse of Esdras*, in which the prophet is anxious about the punishment of the wicked, and minutely describes them as tormented; the *Apocalypse of Paul*, giving a description of all that the apostle saw in heaven and hell; the *Apocalypse of John*, describing the future state, resurrection, judgment, punishment, and reward. This work was written as late as the 5th or 6th century. The *Apocalypse of Peter* is a history of events from the creation to the second advent of Christ, and is said to have been written by Clement, Peter's disciple. It is a late work, mentioning the crusades. Another late work is the *Revelations of Bartholomew*, in which Peter is made the archbishop of the universe, a fact that of itself gives the work a late origin. The *Apocalypse of Mary* described her descent into hell. The *Apocalypse of Daniel* is of little consequence. The *Discussion and Visions of Isaiah* assumes that the prophet had a vision of the life and crucifixion of Christ, the apostasy of the early churches, etc., for which prophecy Isaiah was condemned and died a martyr. The book was written about the 2d century. Other books of the kind are the *Shepherd of Hermas* and the *Testaments of the Twelve Patriarchs*. Many A. writings, both Jewish and Christian, mentioned in ancient works, are otherwise entirely unknown.

APOLLO'NIA, the name of several ancient cities: 1. In Illyria, on the Aous, founded by emigrants from Corinth and Coreyra, commercially prosperous, and toward the end of the Roman empire, a seat of literature and philosophy. 2. In Thracia (afterwards Sozopolis, and now Sizeboli), colonized by Milesians, and famous for a statue of Apollo, which was removed to Rome. 3. The port of Cyrene (afterwards Sorusa, and now Marsa Sousah), which outgrew Cyrene itself, and left evidences of its magnificence in the ruins of its public buildings. This A. was the birthplace of Eratosthenes.

APOL'LOS, a learned Jew from Alexandria, who came to Ephesus during the absence of St. Paul and preached the doctrine of Christ. At Corinth he taught the Jews from their scriptures that Jesus was the Christ. There was a division in the church

at Corinth, and one of the parties took his name, but without his authority, for he was always friendly with St. Paul and preached the doctrines of the apostles. An uncertain tradition makes him bishop of Cæsarea. Luther's conjecture that A. was the author of the epistle to the Hebrews, favored by some scholars of eminence, remains without proof.

APOL'LYON, used (Rev. ix. 11) to translate the Hebrew *Abaddon*, which means "destruction," and thence, the place of the dead; perhaps nearly equivalent to Hades with the Greeks. A. is personified as the angel having dominion over the bottomless pit; as a destroying power, appearing in the forms of beasts at the sound of the fifth trumpet. In the *Pilgrim's Progress* A. is the evil spirit encountering Christian in the valley of the shadow of death.

A POSTERIO'RI. See A PRIORI, *ante*.

APOSTLES' ISLANDS, or THE TWELVE APOSTLES, in lake Superior, near the w. end; belonging to Wisconsin. There are more than twice the number of islands, having in all 125,000 acres. On Madeline island is La Pointe; pop. '70, 221. These islands were occupied by the French missions as early as 1658.

APPALACH'EE BAY, a portion of the gulf of Mexico near the n. part of Florida, extending about 50 m. inland. It receives the waters of St. Mark's, and several smaller rivers, and has a narrow n.w. arm called Okalonee bay.

APPALACH'EEES, a tribe of Indians, of the Choctaw family, in Florida, on A. bay. They were friendly with the Spaniards until white oppression provoked a revolt in 1687, when they were quickly subdued. Soon afterwards, the English and their Indian allies fell upon the A. and killed or carried off many of them. In 1704, St. Mark's was taken and the missionaries put to death. The A. disappeared as a tribe of any importance after 1722.

APPANOOSE, a co. in s. Iowa on the Missouri border; 510 sq.m.; pop. '70, 16,456. It has a fertile surface of rolling prairie, with timber along the watercourses, and large beds of coal. The products are chiefly agricultural. Co. seat, Centerville.

APPARATUS, in the sciences, a collection of tools or instruments for experimenting or working. In physiology, a group or collection of organs associated in a single function; as, the heart, veins, and arteries are the circulatory A.; the limbs are the A. of locomotion, etc.

APPARITOR, a name for officers and public servants who attended magistrates or judges, such as scribes, lictors, and heralds. In England A. is applied to the beadle of a university, who carries the mace, and to the messenger who serves the process of a spiritual court.

APPEAL (*ante*). In the United States an A. is understood to mean the re-hearing by a higher court of a cause or trial which has been decided in due form of law; or the removal to a higher court or authority of a cause pending. In practice, it is the removal of a cause from a court of inferior, to one of superior, jurisdiction, for the purpose of obtaining a review and re-trial. It is, in its origin, a civil-law proceeding and differs from a writ of error in this: that it subjects both the law and the facts to review and re-trial, while a writ of error is a common-law process which removes only matter of law for re-examination. On an A. the whole case is examined and tried, as if it had not been tried before; while on a writ of error the matters of law only are examined, and judgment is reversed if any errors have been committed. An A. generally annuls the judgment of the inferior court so far that no action can be taken upon it until after the final decision of the cause. Rules regulating A. are various in various states. In New York, the court of appeals is the last resort; in the union, the supreme court of the United States.

APPLETON, DANIEL, 1785-1849; b. Mass. He was in business as a trader in Haverhill and Boston, and lastly at New York, where he was the head of the important publishing house of "D. Appleton & Co.," building up an immense business, which is still continued by his sons.

APPLETON, GEORGE SWETT, 1821-78; son of Daniel, an American publisher. At the age of 19 he went abroad; he spent four years at the university of Leipsic, devoting himself to literary and historical researches, and the languages of France, Italy, and Germany. He began business alone in Philadelphia, but in 1849, with three brothers, John, William, and Sidney, succeeded to his father's large publishing business in New York. Among numerous publications which have given this house its high standing, the *American Cyclopædia* is conspicuous.

APPLETON, JESSE, D.D., 1772-1819; b. N. H., a theologian, educated at Dartmouth, and in 1797 ordained pastor of a Congregational church in Hampton, N. H. From 1807 to 1819 he was president of Bowdoin college. He was often called to preach before missionary, peace, and Bible societies, and other public bodies. Franklin Pierce, president of the United States (1853-57), was his son-in-law. His sermons and other works have been published by another son-in-law.

APPLETON, NATHAN, LL.D., 1779-1861; b. N. H.; a merchant and manufacturer, and writer on finance. He, with others, started the first power-loom for weaving

cotton in the United States. He was one of the Merrimac company whose enterprise founded the city of Lowell. He served several terms in the Massachusetts legislature, and in 1830 was sent to congress, where he was one of the prominent advocates of a tariff for protection. He was again elected to congress in 1842. He published a treatise on currency and banking, a history of the introduction of the power-loom, and the early history of Lowell.

APPLETON, SAMUEL, 1766-1853; b. N. H.; an eminent philanthropist, brother of Nathan. He was one of a family of 12 children, and passed his boyhood on a farm, but managed to get sufficient education to become a teacher at the age of 17. In 1794, he and his brother Nathan went into the English trade, in Boston, and afterwards added ventures in cotton manufacture, in which they made a great fortune for those times. He spent much of his time for more than 20 years in other countries, and retired from active business in 1823, when he resolved to devote his entire income to charitable, benevolent, and scientific purposes, and at his death bequeathed \$200,000 more for similar purposes. Besides these large gifts, he was for many years accustomed to distribute liberal aid to the poor and unfortunate.

APPLING, a co. in s.e. Georgia, 1060 sq.m.; pop. '70, 5086-976 colored. It has a level, sandy soil, and is drained by branches of the Santillo. The productions are corn, oats, rice, sweet potatoes, and some cotton and molasses. Co. seat, Holmesville.

APPOLD, JOHN GEORGE, 1810-64; an English civil engineer. His chief inventions are centrifugal pumps for drainage, a process for dressing furs, and an apparatus for paying out submarine telegraph wire, which was very useful in laying the Atlantic cable. He made also many curious automatic machines for opening doors, etc.

APPOMATTOX, a co. in s.e. Virginia; 260 sq.m.; pop. '80, 10,110-4536 colored. Its surface is rough, much of it covered with timber, but the soil is fertile and adapted to wheat, corn, oats, and tobacco. The Southside railroad runs through it. Co. seat, A. Court house, or Clover Hill.

APPOMATTOX COURT HOUSE, a village in A. co., Va., where the confederate gen. Lee surrendered to gen. Grant, April 9, 1865; the surrender which ended the war of the rebellion.

APPONYI, GYÖRGY, a Hungarian statesman, b. 1808. He was a member of the Presburg diet of 1843, and chancellor of Hungary in 1847, when he opposed the revolutionary movements then breaking out, and which caused his retirement. In 1859, he was made a member of the imperial council in Vienna, and was instrumental in bringing about the reconciliation between Austria and Hungary. He is a leading conservative, and is classed among the ablest of European statesmen.

APPOQUINIMINK, a hundred (t. or township) in Delaware; pop. '70, 4299.

APPORTIONMENT BILLS, in the United States, are laws of congress after each decennial census, to define the number of members of the house of representatives to which the several states are entitled. Every state has at least one member. Nine A. B. have been passed. The first constitution adopted by the original 13 states fixed the number of members at 65, and the number of representative population required to be entitled to a member at 30,000. Representative population then meant all free white citizens and three fifths the number of slaves; two fifths of the slaves, all aliens, and Indians not taxed, were excluded from any share in choosing members of congress. The extinction of slavery has made all colored people, except the very few aliens among them, representative citizens. The following figures show the variations of apportionment made for each census:

Period.	States.	Members.	Pop. to a member.	Period.	States.	Members.	Pop. to a member.
1789.....	13	65	30,000	1830.....	24	240	47,700
1790.....	15	105	33,000	1840.....	26	223	70,680
1800.....	16	141	33,000	1850.....	32	234	93,423
1810.....	17	181	35,000	1860.....	34	243	127,381
1820.....	24	213	40,000	1870.....	37	293	131,425

The house had grown rapidly in number of members until 1830, when it was found that it would soon become unwieldy unless the number required to a member should be largely increased; so the ratio was nearly doubled (raised from 47,700 to 70,680). Since then the purpose has been to keep the house below 300 members, and the ratio is raised regularly, while the number of members is seldom increased unless by the addition of new states. In that way the house was increased by the admission of Oregon in 1859, Nebraska and Nevada in 1863, and Colorado (making the 38th state) in 1873. A. B. are passed in the states for the distribution of the state senators and assemblymen, after certain periods, generally of 10 years intermediate with the federal period. Thus New York apportioned after enumerations of 1845-'55-'65-'75.

APPRAISERS and APPRAISEMENT (*ante*). In the United States the law requires the appraisement of property of insolvents and decedents in certain cases; of property taken from public use or for corporations; and in most states, of property seized by creditors. There are many uses for appraisement in private business, the parties mutually agreeing as to how and by whom it shall be done. In litigated causes, and where the public are concerned, courts appraise, or name persons to do so.

APPRENTICE (*ante*). In the United States the system of apprenticeship has largely gone out of use in recent years, and regular indentures and serving of time are now little heeded; but there are laws regulating the business in most of the states. The New York statutes—which may be taken as generally resembling those in many other states—provide that males under 18 and unmarried females under that age may, with consent of natural or legal guardians, or of their own motion, bind themselves as A., but for no longer than until they become of age (males at 21, and females at 18). Consent comes from father, mother, guardian, overseers of the poor, or officers legally qualified, such as the commissioners of charity and correction. Consent of the mother must be had in writing if she be living and not incapacitated. Regular indentures are provided, and specific agreements must be made by both parties, the main provisions of which are that the A. shall serve the term specified; if he run away he may be compelled to return; the master shall provide proper support and medical service; shall teach or cause to be taught the business intended; and give a certificate of full service of the term. Indentures are canceled or annulled only by death, or legal process. An absconding A. may be arrested, and on refusing to return may be sent to the house of correction or jail; or, if the A. willfully refuse to perform his portion of the contract, the agreement may be canceled, the A. forfeiting all claims. On the other hand, neglect, cruel treatment, or refusal to instruct on the part of the master, may be punished by damages, by canceling indentures, or by fine for the benefit of the A. or his parent or guardian. Managers of asylums or homes for indigent children usually have power to bind out. Indentures always require the master to provide a certain amount of education, and imply freedom in religious opinion and choice of church. There is a special section which declares that no person shall accept from any A. or journeyman any agreement, or cause him to be bound by oath, or in any manner, that after his term expires, he will not exercise his trade in any particular place or manner; nor shall any one take money or value from an A. for permitting him to use his trade in any place.

APPURTENANCES, things belonging to another thing as principal, and which pass as incident to the principal thing. Thus in the conveyance of a house and land, everything passes which is necessary to the full enjoyment thereof; and in such case the term includes the right of way, etc. In general it means anything necessary to the full possession and enjoyment of the principal thing. In case of a ship, the usual furniture and things necessary for using the vessel are A.; the boats, sails, anchors, etc.; but it has been held that ballast was not appurtenant.

APRAX'IN, STEFAN FEDOROVITCH, 1702–58; a Russian general. In his youth he served against the Turks, gaining rapid promotion. In Elizabeth's court he was a strong opponent of Prussian influence, and in the seven years' war led an army against Frederick the great, invading Prussia, and capturing Memel. In the midst of success he retreated, and joined the conspiracy to raise Paul to the Russian throne over his father, who was the legitimate heir. He was tried by a court-martial, but died in prison before the end of the cause.

A'PRIES, king of Egypt, the Pharaoh-Hophra of the time of Zedekiah and Nebuchadnezzar. He invaded Syria, but gained no substantial advantages. Herodotus says he was so vain and confident of his power that he would not believe that even a deity could overcome him. His fall was predicted by Jeremiah (xliv. 30), and it came through the revolt of his troops, who took Amasis for their leader, and made A. a prisoner, 569 B.C. Amasis saved his life for a time, but was compelled to give him over to his enemies, who strangled him.

APTERAL, applied to temples of the Greeks and Romans which had no lateral columns, though there may have been columns at the ends.

APURE, a province in s. Venezuela, bordering on Colombia and Guiana; 22,250 sq. m.; pop. 32,485. Capital, San Fernando de A.

AQUA (water), a compound of oxygen and hydrogen, symbol H_2O . The prefix A. was much used by alchemists; *A. fortis*, strong water, is nitric acid; *A. regia*, royal water, a compound usually containing one part of nitric acid with two of hydrochloric, which dissolves gold; *A. vite*, water of life, strong drink, or alcohol. In modern pharmacy we have *A. distilla*, *fluvialis*, *pluvialis*, *fontana*, and *marina*, or distilled, river, rain, spring, and sea water.

AQUA'RIANS, a Christian sect in the 3d c. who used water instead of wine at the Lord's supper. The name was given in Africa, also, to those who in times of persecution forbore to use the wine in the communion when the scent of their breath would be likely to betray them.

AQUUEDUCT (*ante*). In the United States, New York, Boston, Brooklyn, Chicago, and very many other cities and villages have As. for supplying water. The most expensive and costly is the Croton A. for supplying New York, completed in 1842 at a cost of about \$12,500,000. This A. is a little over 40 m. long, running through 16 tunnels, which have a total length of a mile and a quarter, over some short viaducts, and over

the Harlem river on a stone bridge, 1460 ft. long and 116 ft. above high water, with 8 arches of 80 ft. and 7 of 50 ft. span. From the dam in the Croton river to the Harlem river, the A. is of stone, brick, and cement, arched over and under, in shape something like an egg, slightly depressed at either end. The height is $8\frac{1}{2}$ ft., and the width an inch less than $7\frac{1}{2}$ ft. It is capable of delivering 115,000,000 gallons per day. The Boston A. is $14\frac{1}{2}$ m. long, and is chiefly a brick structure. Washington is supplied by an A., 18 m. long, of brick and rubble stone in cement, circular in shape, 9 ft. in diameter, subterranean for the most of its course. Besides these, much greater works are contemplated, such as bringing the water of the upper Hudson, 160 m. distant, or possibly of lake George, more than 200 m., to New York city.

AQ'UILA, CASPAR (the Latin name of Kaspar Adler), 1488-1560; a German theologian. He studied law in Augsburg, Germany, and in Italy, and was appointed pastor of Jenga. He embraced Luther's doctrines, for which he was kept in prison during the winter of 1519-20, but he was set free through the influence of Isabella, queen of Denmark. At Wittenberg he met Luther, whom he assisted in the translation of the Old Testament, having been appointed professor of Hebrew at W. In 1528, he became bishop of Saalfeld, but his vehement opposition to the interim of Charles V. in 1548, compelled him to fly for asylum to the countess of Schwarzburg. In 1550, he was given the deanery of Schmalkalden, and two years later was restored as bishop of Saalfeld, filling the office until his death. He left a number of controversial works and many sermons.

ARAB'ICI, or ARABIANS, a sect in Arabia in the 3d c. who held that the soul dies with the body and will be raised again with it. Eusebius says that Origen convinced them of their error, and they renounced it at the "Council of Arabia," A.D. 246.

ARACA'TI, a t. and port in Brazil, on the river Jaguaribe, 10 m. from its mouth. It is well built, has five or six churches and a town hall. The exports are hides and cotton. Pop. about 5000.

AR'ADUS (now RUAD), a rocky island of about 600 acres, off the mouth of the river Eleutherus, 2 m. from shore and 35 or 40 m. n. from Tripoli. Strabo says that the city of A. was founded by fugitives from Sidon. It was independent, ruled over the adjacent coast, and assisted the Macedonians in the siege of Tyre. Later, the town became subject to Persia, to Antiochus Epiphanes, and to Rome. In 163, the caliph Omar's commander destroyed A., and it was not rebuilt. The ruins show that it was once a very strong place. At present A. has a pop. of 2000 to 3000, chiefly fishermen and their families. There are extensive remains of Phœnician walls; and the remarkable submarine springs, which supplied the early city with water, have been found.

AR'AGO, EMMANUEL, author and French politician; b. Paris, Aug. 6, 1812. In youth he produced a volume of poems and some plays, but at the age of 25 left literature for the bar, where he soon became eminent in political cases. He became an ardent republican, and defended such political recusants as Martin Bernard and Barbes. On the 24th of Feb., 1848, when the abdication of the king was announced in the chamber, A. rose, and, proclaiming that by that act royalty was extinct, demanded the deposition of the Orleans family, and protested against a regency. Under the provincial government, A. was sent to Lyons as commissary general, and prevented a serious insurrection by applying half a million francs to relieve immediate distress. He was afterwards a member of the general assembly for the department of Eastern Pyrenees, and was envoy to Prussia, where he interested himself for the oppressed Poles, procuring the liberation of gen. Microlawski. He resigned as soon as Napoleon was elected, and became one of the future emperor's most active opponents, vigorously protesting against the expedition to Rome. After the *coup d'état*, Dec. 2, 1852, he quitted political life, returning to his law practice. In 1870, he was a member of the provisional government, and soon afterwards succeeded Cremieux as minister of justice. In Feb., 1871, he was nominated for minister of the interior, and minister of war *ad interim* in place of Gambetta.

ARA'GUA, a province of Venezuela, in a fertile region on the river A. It is a small division, only about 3700 sq.m.; pop., estimated, 81,500. Chief t., Victoria.

ARAGUAY'A, or ARAGUIA. See ARAGUAY, *ante*.

ARAKTCHEI'EF, ALEXEI ANDREEVITCH, Count, 1769-1834; a Russian general. Of low origin, he rose rapidly to high rank under the favoritism of Paul, who made him governor of St. Petersburg and commander of his personal guards. After Paul's assassination, A. was kept near the person of Alexander, the succeeding emperor, and in the late years of that emperor's reign, A. became practically the ruler. He was energetic, but cruel, and always untrustworthy. It is recorded that he left in his will a prize for the best history of Alexander's reign, to be written a century after the death of the emperor, and it is supposed that this part of the testament was canceled by Alexander.

ARAP'AHOE, a co. in n.e. Colorado; 4600 sq.m.; pop. '75, estimated, 25,000; in '80, 38,607. The Kansas Pacific railroad passes through, and the co. is watered by the branches of the s. fork of the Platte. The w. part is mountainous, the e. level. Mining and agriculture are the industries. Co. seat, Denver, which is also the capital of the state.

ARAP'AHOE, a recently formed co. in s. Nebraska, bounded on the n. by the Platte river.

ARAP'AHOES, an Indian tribe, dwelling on the upper waters of the Platte and Arkansas rivers, allied by language to the Caddoes. A powerful tribe half a century ago, they are now few in number and inoffensive. The French called them "Gros Ventres."

ARAU'CO, a province in s. Chili between the Andes and the Pacific ocean; area 13,714 sq.m.; pop. '75, 140,896. The chief t. is of the same name, on a bay of the same name, about 300 m. s. of Valparaiso. In this department the Araucanian Indians still maintain their independence.

ARAXES. See ARAS, *antè*.

ARBACES, one of the generals of Sardanapalus, and the founder, 876 B.C., of the Median empire. In conspiracy with a Chaldean priest who commanded the troops from Babylon, he revolted, gained the assistance of several prominent officers, and defeated Sardanapalus, who committed suicide. The dynasty of A. lasted until 559 B.C., when Cyrus overthrew it.

ARBITRAGE, comparing and settling accounts, and arranging disputes, applied both to a calculation and to a trade. As to calculation, A. relates to the simultaneous values at any particular moment of any specified merchandise in one market in terms of the quotations on one or more markets, exchange considered. As to trade, A. relates to the business, founded on such calculations, of buying or selling wholesale in the cheapest market for the time being, and simultaneously re-selling or buying. A. proper is a distinct and well-defined business, with three main branches, viz.: A. in bullion or coin, in bills and exchanges, and in shares or stocks.

ARBITRATION (*antè*). In the United States A. is under much the same laws as in England, but some recent decisions are noteworthy. The New York court of appeals holds as void an article in the constitution of a private society, which made certain members a court to judge of violations of the rules, with power to forfeit the offender's rights in property; regular courts would not enforce the decision of tribunals organized by private agreement, except where the person affected expressly agreed to submit the matter in dispute to A. Some states exclude certain matters from A., as in New York, where claims to life estates, whether in fee or in realty, cannot be submitted, the object of the law being to preclude from unlearned arbitrators questions depending upon strictly technical points. The old rule that married women could not enter into A., is practically obsolete, as most of the states have recently enacted laws which u women nearly onp the plane with men in the holding and disposition of property. The tquestion, whether one partner in business can bind another in an agreement to arbitrate, is not definitely settled, but the drift of authority is against such power, though it is held that the contracting partner is bound, and the partner's refusal to fulfill the award may cost thercontractor in damages. Forms of agreement are unimportant, and may be merely ve bal-without written documents; and the omission of an arbitrator to be sworn is held as only an irregularity. Hearings in A. must be on notice to both sides; where *ex-parte* they are void. If there is to be an umpire he must be chosen before the hearing. All the arbitrators must agree in the award, unless other provision is specially made, and awards must be specially conclusive and final. All states have laws provided for setting aside or overruling the decisions of arbitrators for partiality, fraud, or any misconduct, on appeal to a regular court; and courts may correct mistakes or other imperfections in awards. Some states provide that awards may be vacated for any legal defect. In a few states, laws provide that neither party shall revoke his submission to A. without consent of the other; some provide that no revocation shall ensue after the case has been submitted to the arbitrators upon evidence; in some states the rules are less stringent, and a party may revoke his consent at any time, incurring only the accrued costs, but this seldom happens. Submission to A. suspends the right of suing on the pending cause of action, and a legal award bars the right of suit altogether. If awards are honest and fair, the courts will not vacate them because of mere errors of statement. Justice Story gives decision that arbitrators may make their judgment on the principles of equity and conscience rather than on legal technicalities. In Pennsylvania, a party in a civil action may compel the submission of it to A., with or without the consent of the other party. In New York city there is a "board of brokers" in whose articles of association is a section providing for A. in certain cases. The courts have held that this section is nothing more than an agreement in general terms to submit, and have declined an application to compel a member to such submission, since his refusal was merely an exercise of his power of revocation. A. in international affairs is of long standing, and growing rapidly in favor. Some statesmen look to its general adoption as the happy substitute for war; but so far, questions of only secondary importance have been thus settled. One

of the first in American history was the case of the privateer *General Armstrong*, in which the first Napoleon acted as arbitrator; and the latest and most important concerned the United States—the “Geneva award,” or the settlement of the “Alabama claims,” against England. A treaty was concluded providing for five arbitrators, to be named by the president of the United States, the queen of Great Britain, the president of the Swiss republic, the king of Italy, and the emperor of Brazil. All the judgments were in favor of the United States, and all the arbitrators agreed except lord chief-justice Cockburn of England.

ARBOIS, a t. in the department of Jura, France, in a deep valley on the Cuisance, 940 ft. above sea-level; famous for its wines, which were exempted from taxation in 1493, by Maximilian I. It has trade also in brandy, grain, oil, fruits, cattle, and cheese, and manufactures of paper and leather. It had once a commandery of the knights of Malta, two monasteries, and three nunneries, and still possesses a college and the ruins of a castle. Pop. 6000 to 7000.

ARBORICULTURE (*ante*). The wholesale destruction of forests in the United States long ago attracted attention in the older states, and measures have been taken to remedy and counteract the evil. The most efficient of these is A., which is now well developed in the eastern, middle, northern, and western states. It is estimated that, even in New York, timber has been destroyed at the rate of 150,000 acres per year, most of the wood going for railroad-fuel and building. Landowners, however, are growing more careful, and the young trees, once grubbed out as worthless brush, are now very generally not only spared but nursed. The ordinary process with natural growth is to exclude browsing cattle, and then thin out, taking the crooked and damaged first, and next such as will make hoop poles, hay stakes, etc. The timber left will grow more rapidly and will be more handsome and valuable than a full natural growth. With care, the growing trees may be grouped in lines, and ample wagon roads be left for ease of communication with highways or other fields. Raising trees from seed takes more time and care, but will furnish better timber and larger profit. In this practice the ground is prepared as if for corn, and the seed sown by hand or drill in hills or rows. For a year or two, corn and trees may grow in alternate rows, if desirable to get immediate profit from the land. Large seeds, like chestnuts and walnuts, are planted about three or four times their own diameter below the surface. Evergreen seedlings must be shaded through the first summer, removing the shade occasionally that the plants may be hardened. Not much is done in the way of transplanting in the older states, except for parks and ornamental purposes. In Minnesota and other western states, the successful culture of trees is accepted in lieu of certain taxes, and millions of trees are transplanted annually. It is important to preserve old or raise new trees in thick belts or ranks for the protection of houses, crops, and cattle, against heavy winds and storms. Such protection often saves the half or nearly the whole of winter grain. Where such belts should be planted depends upon the situation of the farm with reference to the prevailing direction of the winds. Simply for ornamentation, A. is largely practiced, and is growing in importance, and men of knowledge and experience are employed for the purpose in public and private parks and cemeteries.

AR'BUTUS (*ante*). The trailing A., *epigæa repens*, called mayflower, and ground laurel, is found on the edges of pine forests in all parts of New England, especially near the coast, and in the valley of the Connecticut, and in Michigan, Wisconsin, and Minnesota. It is prized for its fragrant and beautiful blossom, which is one of the earliest flowers of spring.

ARCA'NI DISCIPLINA (system of secret instruction). See MYSTAGOGUE, *ante*.

ARCH, JOSEPH, an English agriculturist, b. 1828. His parents were in humble circumstances, and he educated himself; at an early age he became an advocate of temperance and a Methodist local preacher. He rebelled against the low price paid for farm-labor, and after much struggle and suffering became a leader in efforts to better the condition of laboring men. In 1872, the national agricultural laborers' union was formed, and A. became its president. In 1873, he visited Canada and the United States to study the condition and prospects of labor, and the question of emigration.

ARCHÆ'AN, or AZOIC, PERIOD—from the Greek for beginning—commencing with the earliest formation of the earth's crust, is the period to which are assigned the oldest rocks on which those of late ages have been spread, and from which most of them have been made. The archæan rocks, extending round the globe, are in most places shut out from sight by the later formations, yet in various parts of both hemispheres, rising above the rest, they are exposed to view as surface rocks. In Europe they are visible in the n.w. of Scotland, in the iron regions of Norway and Sweden, in the n.w. and n.e. of Russia, down to the White sea, in the Ural mountains, and further s. in Podolia. In central Europe they appear in the midst of the more recent formations, protrude frequently in the Carpathian mountains and central crests of the Alps, and in Bavaria and Bohemia between the Danube and the Elbe. In North America they rise to the surface in a large district between the Arctic circle and the great lakes, in a tract s. of lake Superior and another in southern New York, in the Highlands, and in the central part of the Appalachian chain and Rocky mountains. In Canada, where they have been carefully

studied, they are believed to be more than 30,000 ft. thick, in Europe their exact thickness can scarcely be conjectured, yet it must be many thousand feet. These rocks are chiefly crystalline, such as granite, syenite, gneiss, syenitic gneiss, mica-schist, hornblende schist, chlorite slate, and granular limestone. There are also some hard conglomerates, quartz rocks, and slates. They very often contain iron-bearing minerals, and immense beds of iron ore are found with them in northern New York—where they are from 100 to 200 ft. thick—New Jersey, Michigan, and south of lake Superior. Graphite also is found abundantly throughout the archæan rocks of Canada and the adjacent parts of the United States. In the archæan rocks indications of life are almost if not entirely wanting. For this reason the period is named also the *azoic*, lifeless. But in the limestones of Canada a form has been discovered which is thought by eminent geologists to be a coral-like fossil made by protozoans of the class of rhizopods, the simplest kind of animal life. Its organic nature has not indeed been placed beyond doubt; still geologists think it probable that rhizopods existed in the waters before the close of the archæan period, and that the beds of limestone have been made up of their minute shells. The abundance of graphite found throughout the archæan rocks of Canada and the United States is also regarded as an indication that organic plants then existed, as it is known that in late times graphite has been formed out of such remains. For these reasons the name *cozoic*—the dawn of life—has been proposed for the later portion of the archæan period.

ARCHÆOL'OGY (*ante*), has recently gained new and world-wide interest through the indefatigable labors and rich discoveries of count and gen. Luigi Palma di Cesnola, and Dr. Heinrich Schliemann, the first a native of Italy, but an American citizen, and the last a native and a citizen of Germany. At the close of the civil war in the United States, in which gen. di Cesnola served with distinction, he was sent as American consul to Cyprus. He was at once inspired with the idea that the famous island was the door between Asia and Europe, and must be full of relics of the nations which traversed and ruled it three thousand years ago. This was in 1865, and he very soon devoted his whole attention to archæological investigations. He began excavations at Kitium (the Chittim of the Old Testament), over the buried streets of which there is now the town of Larnaca. Within a year he found the sites of three other old cities, Salamis, Golgos, and Idalium. At Kitium he found that the graves had been plundered, most likely in the time of the early crusades; but he discovered the remains of a temple dedicated to Demeter Paralia, and next to it, in a tomb, a jar with 600 gold coins of the great Alexander and his father, Philip of Macedon. He also found remains of a Phœnician temple, older than that of Demeter, a marble sarcophagus with a Phœnician head in high relief, and two vases of alabaster. The Greek tombs, more than 2000 of which he opened, contained lamps, bronze mirrors, glass vessels, and other funereal decorations. At Idalium, under the modern town of Dali, 15,000 tombs were opened, the greater part Phœnician, in which were myriads of the oldest terra-cotta vases of all shapes and sizes, and some Greek vases containing iridescent glass. At Salamis he found nothing of consequence; that city was doubtless despoiled of its art-treasures at an early period. In the ruins of Leucolla he found the remains of a temple with statues, and near it a rock cavern accessible only from the sea, in which was an immense quantity of human bones in a state of petrification. At Golgos he found most of the rich store exhibited by him in London in 1872, which the British museum sought to secure, but which New York acquired. In the course of further exploration he found the sites of nearly a dozen cities and towns, Acte-Achæon, Amathus, Aphrodisium, Arsine, Karpassia, Lapethus, Neo-Paphos, Palæo-Paphos, Soli, Throni, and Visuri. Then came his great triumph, at Kurium, where in the treasure-chambers of an unknown temple he found the most wonderful deposits of gold and silver diadems, bracelets, rings of all kinds, armlets, etc., votive offerings of the finest workmanship, among them some of the finest gem-engraving and delicate metal work ever discovered. The extent of his discovery may be judged from the fact that from one treasure-chamber, or series of vaults, he took more than 1200 objects, about half of them of gold. Some of the more interesting articles, in a historical view, are: the official seal of Thotmes III., a king of Egypt who conquered Cyprus about 3300 years ago; Babylonian cylinders, or records on fine stone, which Rawlinson and Sayce refer to dates 2700, 3100, and 3500 years ago; a gold armlet of a king of Paphos of six or seven centuries B.C., and others of less clearly defined ancient dates. Rings in the form of asps, some retaining their stone settings or remains of enamel; gold clasps and pendants, beautifully incrustated by a granulating process, and diadems of gold, clasped around the foreheads of skulls, are among the treasures. There is a calyx of gold, nearly six inches in diameter, with circular engraved bands on which are traced stags, hunters, palm trees, and water, in the Egyptian style, an article of remarkable beauty in perfect preservation; there are also numerous articles of silver and bronze of rare interest. But the most valuable portion of the treasure is the large collection of engraved stones. Carnelian, agate, onyx, jasper, chalcedony, and other hard and fine grained stones, were used by the ancient engravers. One specimen, "Boreas carrying off Zephyr," is a masterpiece of genius; the "Rape of Proserpine" is also very fine. These are in miniature, less than an inch in diameter. Intaglios are in the collection in hard stone, representing Egyptian gods, priests, and worship. There are carvings in alabaster, and others of terra cotta. The objects in bronze, more than 500 in number, are lamps, mirrors, stands, vases, and heads of animals

This wonderful collection, but a portion of which can be here indicated, was purchased for the city of New York, and may be found in the museum of natural history and art, Central park.

Dr. Schliemann's earliest researches were where he believed would be found Homer's city of Troy, but it is at least an open question whether the ruins he discovered were of the famous old place, whose existence has been thought scarcely more than legendary, though he was confident that he had identified the temple of Athenæ. His late operations were upon old Mycenæ, the capital of Argolis, and Agamemnon's home. He found the ruins of the acropolis, which the people of the vicinage to-day call Agamemnon fort, the pavements of which show the wear of chariot wheels, and the walls the application of bolts and hinges. What the present natives call the tomb of Agamemnon, he found to be the treasury of Atreus, cut into the side of a hill and facing a deep ravine. The interior is in two compartments, the first shaped like a cave, 50 ft. wide and 50 ft. high, and the other square, 21 ft. each way. The walls are of hewn stone, without cement, and were once faced with polished metal. A number of tomb slabs, found near but outside of the acropolis, are believed to mark the burial-places of Agamemnon and his companions. A great number of tombs were opened, but few remains of bodies found. In one place, however, he found a vault 21 ft. long, $14\frac{1}{2}$ deep, and nearly 12 wide, in which there were human remains. One of the dead bodies had been covered with five thin plates of gold, from $18\frac{1}{2}$ to 25 inches long and $2\frac{1}{2}$ wide, upon which were crosses and gold foil. There were also gold blades, vases, fragments of porphyry, and other sculptures. But the most important discovery was that of a subterranean treasury, dome-shaped, with an entrance 13 ft. long, and a roof of stone slabs over three yards long, supposed to have been a royal treasure-chamber, and covered at a very early period. Here were rude idols of Hera, or Juno, and other female gods; male idols of Assyrian type; idols in the form of a cow, sacred to Juno; an idol with a bird's head; female forms with the heads of cows, the latter on the handles of vases. There were bronze lances, hatchets, knives, hair-pins, vases, and a tripod. Vases were found in large numbers and great variety of painting. There were large goblets with one and two handles; fragments of a white marble frieze, with spiral ornaments, and part of a necklace, with beads strung on copper wire. In other places he found more idols, copper and iron-headed arrows, a wooden fish, a scepter-head of green stone carved into an Egyptian face, knives and arrows of obsidian, and a glass dish having impressed in it the image of a fly. Still further search disclosed an immense cyclopean house, thought to have been a royal palace. Here he found an onyx finger-ring with figures of hornless cows in intaglio; neck beads; a jasper mold for gold and silver ornaments, having patterns or dies on each of its six sides; axes of green stone and jasper; paintings of warriors in red on a yellow ground, the figures being of an Asiatic type. There were also vases, with handles in the form of crocodiles, a large dragon tripod, and other vessels of brass. Dr. S. has presented this entire collection to the government of Greece. Archæological researches are in progress at Rome, Pompeii, and in other places.

ARCHÆOPTERYX, a fossil bird, long tailed and of reptilian nature, found in the jurassic limestone of Bavaria. As near as can be judged from the few specimens, the A. appears to have been in some sort a link between reptiles and birds. Its wings were short, but had long plumes, which spread like a fan, its tail was vertebrate, and feathers grew out from either side.

ARCHANGEL, or ARKANGELSKOE, a government and city of Russia; the government between 61° and 71° n., and 29° to 68° e., along the White sea and Arctic ocean, and including the island of Nova Zembla: 286,739 sq.m.; pop. '67, 275,779. The n. part is sterile, and its winters are severe. Below the arctic circle are extensive forests, lakes, and morasses. The spring is moist, with cold frosty nights: summer has long, foggy days, and the autumn is short and moist. The wealth of A. is in its forests. Gold, naphtha, salt, coal or lignite, and sulphur springs are found. The productions are pitch, tar, tallow, turpentine, potash, cordage, mats, and leather.

ARCHELA'US, surnamed PHYSICUS, a Greek philosopher, pupil of Anaxagoras, about 450 B.C. Nothing of his writing remains, but his leading ideas were like those of his tutor. He admitted a primitive matter, consisting of infinite particles similar in nature to the bodies formed from them. He also admitted a ruling mind. He thought matter was mingled with mind, and identified the primitive matter with air: thus his first principle was air endowed with mind. Out of this air, by processes of thickening and thinning, arose cold and heat, or water and fire, the first passive, the last active. From the action of fire and water were formed the atmosphere, and the mud out of which the heavenly bodies were developed. Living organized beings, at first of low type, sprang from the mud, and gradually the races of animals were formed. Man he held to be superior to other beings by reason of his artistic and moral powers.

ARCHELA'US, a sculptor, celebrated for his bass-relief representing the apotheosis of Homer, which is supposed to have been made in the 1st c. of the Christian era. It was purchased in 1819 for the British museum.

ARCHER, a co. in n. Texas, of about 900 sq.m., newly organized and thinly settled, but favorable for cattle raising and the growth of cereals. There are also valuable minerals, bismuth among them.

ARCHER, JOHN, 1741-1810; b. Md.; the first man in the United States honored with the degree of doctor of medicine. He was an officer in the army of the revolution; member of the Maryland general assembly, and representative in congress from that state for three terms, 1801-7.

ARCHES, COURT OF The name is derived from the ancient place of sitting, which was in the church of St. Mary of the Arches, now usually called Bow church, London. The old church, which was destroyed in the great fire of 1666, had a fine arched crypt, whence came the name. The C. of A. is the court of appeal of the archbishop of Canterbury, as metropolitan of the province, and the judge is styled the dean of the arches. Appeals from decisions of the C. of A. are heard before the judicial committee of the privy council. The C. of A. is empowered to hear such suits as are sent up to it by letter of request from the consistorial courts of the bishop of the province of Canterbury after they have issued commissions of inquiry and the commissioners have made their report. The official principal of the C. of A. is the only ecclesiastical judge who is empowered to pass a sentence of deprivation against a clerk in holy orders.

AR'CHIAS, AULUS LICINIUS, a Greek poet of the 2d c. B.C., defended by Cicero in one of his most noted orations. He passed his life almost entirely in Rome and among Romans, serving under L. Lucullus, Sulla, and other eminent commanders. Cicero and Quintilian praise his gift of extemporization, the richness of his language, and his wealth of thought.

ARCHIA'TER, or ARCHIATOR, "principal," or "chief physician," a complimentary title given by some Roman rulers to their favorite medical attendants, who were usually Greeks. The use of the title and the office spread to all large towns, and a certain number of doctors were selected as *archiatri*, with salaries and perquisites, but required to minister to the poor without charge. They also served in the same capacity as modern health officers. A similar medical order is still found in some of the Scandinavian countries.

ARCHIBALD, ADAMS G., b. 1814; an English colonial statesman. He was a native of Nova Scotia, and was twice chosen to the colonial legislature, in 1851 and 1855. In 1856 he was solicitor-general, and one of the liberal leaders, and was again sent to the legislature. He was president of the council in the cabinet formed by Sir John Young, and secretary of state for the province; in 1871 received the office of lieutenant-governor of Manitoba, but resigned the next year.

ARCHIDA'MUS I., king of Sparta about 668 B.C.; the 12th of the Eurypontids, son of Anaxidamus. He reigned in the time of war with the Tegea.

ARCHIDA'MUS II., King of Sparta, 17th of the Eurypontids, son of Zeuxidamus. He took the scepter after the banishment of his grandfather Lectychides, 469 B.C. In the fourth or fifth year of his reign Greece was shaken by a terrible earthquake, and Sparta was left a heap of ruins. He seems to have been a wise and temperate ruler, moving with deliberation, and more merciful than might have been expected in those days. His only famous child was Agesilaus.

ARCHIDA'MUS III., grandson of A. II., King of Sparta, 20th of the Eurypontids. He succeeded his father 361 B.C. In six years afterwards he defeated the Argives and Spartans, and the next year defended Sparta against Epaminondas. In the sacred war he at first assisted the Phocians, but when Philip came into the field he abandoned them. In 338 he went to Italy as an ally of the Tarentines, and was slain in battle on the same day that Philip won the important victory of Chæronea.

ARCHIDA'MUS IV., grandson of A. III., King of Sparta, 23d of the Eurypontids. In 296 B.C. he defeated Demetrius Poliorcetes.

ARCHIDA'MUS V., King of Sparta, 27th of the Eurypontids, brother of Agis IV. On his brother's murder, 240 B.C., A. fled, but subsequently obtained the throne through the assistance of Aratus. But he was killed by those who had slain his brother, and so ended the last of the Eurypontids, his sons being passed over and the crown given to Lycurgus, a stranger.

ARCHITECTS, AMERICAN INSTITUTE OF. An attempt was made among leading architects to organize this institution about 1836, and again in 1857, but it was not established on a permanent footing until 1867. The office and library are in Trinity building, New York, and it has chapters in many places in the country. The proceedings of the annual conventions include a number of papers and debates on constructional and æsthetical subjects, published with the annual reports of the society. Through its chapters the institute has improved the building laws of the country in various localities, and called public attention to the deficiencies of many national structures. The main object of this institute is to unite in fellowship the architects of this continent, and to combine their efforts so as to promote the artistic, scientific, and practical efficiency of the profession. It proposes to have the laws in relation to public health and safety, as connected with buildings, perfected; and as the profession of architecture has no legal restrictions and no requirement of examinations, the members propose to effect all necessary reforms through the institute. A charge of 5 per cent on the cost of building has

been adopted for full professional services, distributed as follows: 5 per cent for full services, of which $2\frac{1}{2}$ per cent are for working drawings and specifications, 1 per cent for detail drawings, and $1\frac{1}{2}$ per cent for superintendence. America can hardly claim to have produced a special school of architecture, but there are many public edifices that deserve to be mentioned as specimens of architectural beauty. Many of our best architects are now designing in what is termed the "colonial" style, which is an adaptation of the Dutch style so much in vogue in this country during the last century. Comparatively little attention was paid to architecture before the civil war, but the growing taste and prosperity of the country have enabled architects to erect many handsome dwelling-houses, which will in no way suffer by comparison with those of European cities. Brick, stone, and iron are now much used in this country, and the Gothic style has been widely adopted for church edifices. Trinity church in New York, completed in 1846, one of the first great Gothic edifices of stone in the United States, Grace church, and St. Patrick's cathedral, in the same city, are fine specimens of that style. The temple Emmanuel is a reproduction of Saracenic forms. The Roman Catholic cathedral in Philadelphia is modeled after the Italian edifices of the time of Michael Angelo. Trinity church, of Boston, is the best example of the Romanesque influenced by the Byzantine, copied from edifices erected in France during the 12th century. The new "Old South church" in Boston is a building of strong form and decoration. The museum of art in the same city inclines to the Venetian Gothic, and among the more prominent of the later renaissance buildings are the Boston and New York post-offices, built of granite, brick, and iron. The lofty *Tribune* building is a noticeable feature of the lower part of New York. The Grand Central railroad depot of New York, and the new Lowell and Providence depots in Boston, are splendid and well-appointed structures. The capitol at Washington, the corner-stone of which was laid in 1793, is in the style of renaissance. Extensive additions have been made to both wings since 1850. The material used is a handsome marble, the original building being of sandstone. The treasury building and the patent office are in the Greek style, as are the sub-treasury and custom-house, at New York. Of public buildings in Gothic form, a high rank must be given to the Connecticut state capitol at Hartford, the new capitol at Albany, N. Y., and the Ohio capitol at Columbus. Many fine buildings have been erected for commercial purposes in various cities of the United States which justly deserve the title of "business palaces," and are well suited to accommodate our merchant princes. Although architects are somewhat fettered by the small lots of 25 ft. in width prevailing in most of our cities; many dwelling-houses present remarkably handsome exteriors and interiors. Fifth avenue, in New York, is in this respect one of the finest thoroughfares in the world. The apartment houses which have come into fashion since the late war, covering more than one lot, have fared better in an artistic point of view, of which the Stevens house of New York is one of the notable examples. Many beautiful country residences are to be found at Newport, Long Branch, and scattered throughout the country. There is a class of dwellings, however, which deserve severe censure, the so-called tenement-houses of our large cities, in which hundreds of families are crowded, at low rents, without proper accommodations for light, air, or water. But there is a movement to introduce marked improvements in this class of houses. (See Fergusson's *History of Architecture, Ancient and Modern*.)

ARCTIC CURRENT comes from the northern ocean down Davis's strait and also down the e. coast of Greenland, joins the Labrador current off cape Farewell, flows along the Newfoundland coast, and is lost in the gulf stream. Its water is very cold, and has the effect of lowering the temperature of the Labrador coast.

ARCTURUS, the principal star in the constellation Bootes (the "herdsman"). A. is of the first magnitude, and one of the most conspicuous objects in the northern heavens. Its right ascension is 14 h. 10.2 m. and declination $19^{\circ} 49' \text{ n.}$

ARCUEIL, a French village, about 4 m. s. of Paris; pop. about 6000. The place is celebrated as the residence of the chemist Berthollet, and also for the ruins of an aqueduct made by order of the Roman emperor Julian to convey water to his residence.

ARCY, GROTTO OF, a remarkable cavern 12 m. e. from Auxerre, France. It is supposed to have been used in early times as a stone quarry, and possibly the material for the Auxerre cathedral was taken from it. One of its divisions is 400 yards long, 26 high, and 14 wide.

ARDEBIL', or **ARDABIL**, a t. in Persia, $38^{\circ} 15' \text{ n.}$, $48^{\circ} 19' \text{ e.}$, in a fertile plain, 40 m. from the Caspian sea, apparently built from the ruins of a former city. It is surrounded by a wall of mud, with towers and fortified bastions at the corners. Its sacred treasure is the tomb of Shah Ismael Sufi, founder of the Sufi dynasty of Persia. Nadir Shah was here crowned king after the great council of the empire in 1736. A. is an emporium of trade for Tiflis, Derbend, Boku, Ispahan, and Teheran. From remarkable salubrity of climate it has acquired the title of "abode of happiness."

ARDESHIR', or **ARDSHEER**, **BÁBEGAN**. See **ARTAXERXES LONGIMANUS**, *ante*.

AREOP'AGUS. See **AREIOPAGUS**, *ante*.

ARETINO, **GUIDO**, or **GUIDO D'AREZZO**. See **GUIDO ARETINO**, *ante*.

ARGÆUS, MOUNT (Arjis Daglı), the highest point in Asia Minor, a little over 13,000 ft., which is nearly 3000 ft. above the line of perpetual snow. On the s. it connects with the Taurus mountains.

ARGALL, Sir SAMUEL, 1572-1639; one of the early colonists of Virginia. He became famous for carrying off the more famous Pocahontas, daughter of the Indian chief Powhatan, and presenting her to the government of the colony as a slave. A., it is said, bought the girl from the Indian having charge of her, for a brass kettle. In 1613 A. broke up the French settlement at Mt. Desert, Me., and the act was the cause of war between the English and French colonists, in which the settlements of the latter at Port Royal and St. Croix were destroyed. In 1617 he became deputy governor of Virginia, where he violated the established laws, and made others to favor illegal trade in which he had the earl of Warwick for a partner. Instead of being punished he was shielded by his powerful partner, both acquiring immense wealth, to which A. made large additions by robbing the estate of lord Delaware, of which he was administrator. He was captain in the expedition against the Algerines in 1620, was knighted the next year by James I., and in 1625 was in Cecil's expedition against the Spaniards.

ARGENSON, MARC ANTOINE RENÉ DE PALMY, D', 1722-87; a French diplomat and author, son of Louis XVth's minister of foreign affairs. He was envoy to Poland, Switzerland, and Venice; a member of the royal academy, and is gratefully remembered for the princely donation of 150,000 volumes to its library. He was editor of 40 volumes of the *Universal Bibliography of Romance*, in which are some novels of his own.

ARGENSON, MARC RENÉ D', 1771-1842; a French soldier and statesman. He served as Lafayette's adjutant, and took part in the expulsion of the English from Walcheren. In 1809, he was prefect of Antwerp (then Deux-Nèthes), but resigned rather than confiscate the property of the mayor at the order of the French ministry. He was elected deputy for Belfort in "the hundred days," and re-elected after the second restoration. In 1830 he appeared in the chamber to represent Strasburg, and in 1832 was one of the members who signed the *compte rendu*. The next year he put his name to the manifesto of the "Society of the Rights of Man." He was a prominent member of the Carbonari, and was to be dictator in case the expected revolution should succeed.

ARGENTEUIL, a co. in Canada, on the Ottawa river; 850 sq. m.; pop. '71, 12,806. The soil is good, and there are valuable deposits of buhr (burr) stone. Principal t., Lachute.

ARGENTINE CONFEDERATION. Under the constitution of the A. C., the executive power is in a president elected once in six years by the 133 representatives of the 14 provinces. The legislative authority is in a national congress, consisting of a senate of 28 members, two from each province, and a house of deputies of 50 members. The government is modeled after that of the United States in nearly all particulars. The governors of the provinces are elected by the people. The public revenue is mainly from customs or duties, which are very heavy. For 1876 the receipts were \$13,040,285, and the expenditures \$25,279,520. The public debt at the close of 1877 was \$40,621,700. At the end of 1876 the army numbered 12,393 men, besides which there was a national guard of 19,867 men. The navy consisted of 26 steamers of all sizes, carrying 78 guns. There were, Jan. 1, 1878, ten railroads in operation, with a total length of 1409 m.; besides 1568 m. in prospect, sanctioned by the government, including an international line, 864 m. long, from Buenos Ayres to Chili. At the end of June, 1877, there were 4820 m. of telegraph in operation, with 9830 m. of wire. About 70 per cent of the lines are under government control, and 30 per cent in private hands. See ARGENTINE REPUBLIC, *ante*.

ARGIVES, or ARGIVI, a name often applied by Homer, and sometimes by others, to all inhabitants of Greece, but more accurately only to those of the more powerful state or government of Argolis, in whose chief city, Mycenæ, Agamemnon had his residence. (See ARGOLIS, *ante*.)

ARGO, a large southern constellation, in which is commemorated the mythical ship of the Argonautic expedition. Canopus, a star of the first magnitude, is its chief ornament; its declination, 52° 38' s., renders it invisible in the northern and central United States.

ARGONNE, a rocky, tree-covered plateau in n.e. France, extending along the border of Lorraine and Champagne, and forming parts of the departments of Ardennes and Meuse. Dumouriez called his defense of this frontier in 1792 the "Argonne campaign."

ARGOON, or ARGUN, an affluent of the Amoor river, rising in the Mongolian mountains and running n.n.e. through the northern part of the desert of Gobi to lake Kulon, thence n., separating Russian from Chinese Tartary, to meet the Shilka, the two forming the Amoor.

ARGOS. See ARGOLIS, *ante*.

ARGOT, French for what the English call "slang," especially the dialect of thieves and vagabonds. Like all such tongues, A. is often sparkling with wit and remarkable for aptness and comprehensiveness of expression. Many specimens of it are to be

found in Victor Hugo's *Les Misérables*, and in the lower grade of Parisian journals and stories.

ARIEL, used by Isaiah as a proper name, which he applies to Jerusalem, as "victorious under God." In Shakespeare's *Tempest*, A. is a spirit of the air, in the service of the magician "Prospero."

ARINO RI MORI. See MORI, ARINORI.

ARISTA, MARIANO, 1802-55, a Mexican general. He commanded at the battle of Palo Alto, May 8, 1846, and was defeated by the Americans under gen. Taylor. In 1848, he was minister of war, and two years later president of Mexico. In 1850, Santa Anna led a successful revolution, as the result of which A. was deposed and banished.

ARISTIDES, ÆLIUS, surnamed THEODORUS, a Greek rhetorician, b. about 117 A.D. son of a priest of Zeus. He had a natural taste for rhetoric and public speaking, and won such renown for eloquence in Greece, Italy, Egypt, and Asia, that monuments were erected to him in several cities. He is said to have been very vain of his attainments in oratory. For 13 years he was afflicted with some strange nervous disease, apparently hypnotism, or nervous sleep, something like mesmerism. When Smyrna was destroyed by an earthquake, in 178, A. was living there, and wrote to the emperor Aurelius an eloquent account of the catastrophe; the emperor responded with substantial aid for the sufferers, and for this the grateful Smyrneans called Aristides the founder of the city, and erected to him a bronze statue. The only personal honor which he would receive was the appointment of priest of Esculapius, which office he held until his death about 189 A.D. His works extant consist of orations and declamations, which show no great power, and two treatises on rhetoric.

ARISTIDES OF THEBES, a Greek painter in the time of Apelles, about the middle of the 4th c. B.C., and brother of Nicomachus, who was one of his teachers. He was noted for power of expression in his work, one of his finest pictures being that of a babe approaching the breast of its mother who was mortally wounded, and whose face shows her fear lest the child should find blood instead of milk. His works were bought at enormous prices, and one of them was the first foreign painting ever exhibited to the public in Rome. He left two sons, Nicerus and Ariston, to whom he taught his art.

ARISTOBULUS I., Prince of Judea, succeeded his father, John Hyrcanus, in 107 B.C. The son took the title of king, the first instance of its assumption among the Jews after the Babylonian captivity. He murdered his mother, to whom his father's will left the government, and imprisoned all but one of his brothers, and this one at a later period was put out of the way through the influence of Salome, the queen. During his reign he subdued the Itrurians and compelled them to adopt Jewish laws. It is supposed that the death of A. was hastened by remorse for the crimes which he had committed.

ARISTOBULUS OF CASSANDRIA, probably the same with the Greek historian A., 330 B.C.; one of the companions of Alexander the great, whom he accompanied in his Asiatic expeditions. He did not write his history until he was 84 years old, and he died at 90. Subsequent historians, Arias particularly, made free use of Aristobulus, work.

ARISTOMENES, a Messenian statesman and general, who commanded the army in the second Messenian war. He fought with success from the battle of Dera, 685, until 688 B.C., when he was finally defeated, and returned to Rhodes, where his son-in-law was one of the reigning princes. His fame lasted through many centuries.

ARITA, one of the most famous seats of the Japanese porcelain industry, in the province of Hizen, Japan, containing 8 or 10 quarries of finest kaolin clay. The town lies 300 ft. above the sea, contains 80 potteries and 12 kilns; pop. 6400. Seven other villages devoted to the ceramic industry are near A., and receive their clay from its quarries. These contain in all 100 porcelain and faience factories, and in each village are two *nobori*, or series of kilns with from 12 to 14 ovens each. Some of the kilns have 22 chambers. All the *nobori* are built up the sides of a hill, so that the heat and flames may ascend from the lowest to the topmost oven. The baking of the biscuit ware requires 24 hours, the pieces being left in 20 days for annealing. Fine vases have three firings, one for biscuit, one for glaze, and the final for color and gilding. The beds of clay were first discovered and put to use towards the end of the 17th century. They are the detritus of old volcanic rocks, are white, compact, and amorphous, with few visible crystals of quartz. Though of various qualities, they are practically inexhaustible. Smaller beds furnish fine-layered clays, which yield light yellow and green glazes. From A. came most of the Japanese porcelain and faience long renowned in Europe, and now so familiar in America. The wares, carried on the backs of men for safety, are shipped from Imari, the seaport, or from Nagasaki, hence sometimes receiving the names of the latter places.

ARIZONA (*ante*), one of the territories of the United States, bounded n. by Utah, e. by the territory of New Mexico, s. by Mexico, w. by the states of California and Nevada, extending from 31° 37' to 37° n., and from 109° to 114° 25' w.; area about 114,000 sq. miles. This territory was taken in 1863 from that of New Mexico, including also the Gadsden

purchase, and in 1870 had 9568 inhabitants, besides Indians. The latter number about 32,000, of whom 5000 are settled on reservations. Those on the reservations, and some of the roving tribes, are friendly with the whites, but many are hostile, and of these the Apaches are the most numerous and warlike, comprising several tribes scattered over the middle and eastern part of the territory. Of the friendly Indians the most important are the Pima and Maricopa tribes on the Gila river. Near the Mexican border are the Papogos; on the Colorado are the Mohaves and Yumas, and the Utes are on the upper Colorado. The settled tribes are engaged in agriculture and stock-raising. In the northern part of the territory are a few Pueblo, or "town," Indians, called Moquis, who are, perhaps, the remnant of the once powerful Aztecs, though some suppose of a still earlier race. They are a quiet, inoffensive people, dwelling in stone houses, and enjoy many of the arts of civilization.

A. is a rough and elevated country of broad plateaus from 7000 to 7500 ft. above the sea in the n., but declining toward the s. to less than 100 feet. Mountain chains cross the plateaus, with summits and isolated peaks from 12,000 to 14,000 ft. high. The streams flowing southward have worn enormous gullies or canyons in their course, to a depth in some places of many thousands of feet. The great canyon of the Colorado is the largest in the world, so far as known, being 400 m. long, with walls for the most part perpendicular and from 1500 to 6000 ft. high; while at the bottom of this chasm the river plunges and roars down cataracts and whirlpools that make extended navigation impossible, and even exploration very difficult and dangerous. The mountains are chiefly spurs and branches of the Rocky mountains, and range generally from n.e. to s.w. The main groups or ranges are the Castle Dome, in the s.w.; the Black and the Aquarius in the w.; the North Side in the n.w.; the Carizo and San Francisco in the n.; the Cata-moza in the n.e.; the Mongolon and Zuni in the e.; and in the n.e. the St. Catherine, the Pinaleno, and the Piloncello. There are also buttes, or solitary peaks, which rise to a great height; and in the n. there is a large table-land more than 1000 ft. above the plateau, known as the table-land of cows. Some of the mountains were once active volcanoes, but not within historical record. The mountains consist of granite and kindred rocks. The grand canyon of the Colorado shows most of the geological formations from the underlying granite to the upper carboniferous limestone.

The principal river is the Colorado, over 1200 m. long, rising in Utah, draining 300,000 sq.m., and falling into the northern end of the gulf of California. The Colorado forms the boundary between A. and the lower part of Nevada and the whole of California, entering A. in the center of its northern line, running s.w. about 70 m., then irregularly w. 1000 m. or more, and then nearly s. to its end. It receives 200 streams, chiefly small; runs 600 m. in deep canyons, and falls 3000 ft. from the northern to the southern line of the territory. The river is navigable from the mouth to the beginning of the Grand canyon, in Nevada, but the voyage is very difficult. The second river in point of size is the Gila, rising in New Mexico and flowing nearly w. across A., emptying into the Colorado not far above the mouth of the latter. The Gila has several tributaries, but none of much size, nor are any of them useful for navigation, though of great importance for irrigation and mining. Though much of the territory is occupied by mountains, high table-lands, and vast canyons, there is good soil, especially in the southern part around the Colorado and Gila, where the overflow fertilizes, and enormous crops are produced. The plateau in the e. and n.e. is well wooded, and the larger part of the territory is excellent for stock raising. The census of 1870 showed 14,585 acres of improved, and 7222 acres of unimproved land in farms, though settlement had scarcely begun, and the land cultivated by Indians was not reckoned. The climate is delightful in winter in the southern section, but cold in the northern, though frost and snow are unusual except on the mountains. The summer heat is intense in some places, particularly near the junction of the Colorado and Gila, where 120° in the shade, and 160° in the sun, have frequently been noted. In the north, however, the summer heat is seldom continuous for a long period. The rainy season is in June, July, Aug., and Sept., no rain falling in the other eight months; hence the importance of irrigation. There were, Jan. 1, 1879, 27½ m. of railroad in the territory, starting from Yuma, and designed ultimately to be a portion of the Southern Pacific route from the Mississippi to California. School age in A. is from 6 to 21; whole number of children, 2955, of whom 1213 were enrolled; average attendance, 900; 180 school days in the year; 20 teachers; income \$31,449, raised by a levy of 15 cents on each \$100 of taxable property in general, and 35 cents on each \$100 for the several counties. Value of school property, \$42,230.

ARK, a term in the Bible for three objects: Noah's A., the A. of bulrushes in which Moses was laid, and the A. of the Covenant (see ARK OF THE COVENANT, *ante*). Noah's A. was not a ship, but more like a barge, intended not to sail, but only to float. Its shape was that of a parallelogram, 300 cubits long, 50 wide, and 30 high; but the length of the cubit is unknown, and it is impossible to ascertain the dimensions of the craft. Dr. Robinson concludes that it was an oblong house of three stories, with a flat or slightly inclined roof, a door in the side, and one or more windows in the roof. Many nations have the common tradition of the preservation of their ancestors in an A., or some vessel which would float on the water. The A. of bulrushes was really of papyrus reed, of which Pliny says the Egyptians "weave boats;" such boats were light and

noted for swiftness. The slime, with which the A. of B. was covered, was for the purpose of keeping out the water.

ARKANSAS (*ante*), one of the United States, the 12th in the order of accession after the original thirteen. The first white settlements within the bounds of the present state (which is a part of the Louisiana purchase of 1803) were made about 1670-80 by Frenchmen near the junction of the St. Francis river with the Mississippi. After Louisiana had been admitted as a state, the remainder of the purchase was organized as the territory of Missouri; and after Missouri applied to become a state, the territory of A., including the present Indian territory, was formed, Mar. 2, 1819. A state constitution was formed Mar. 1, 1836, and A. was admitted as a state June 15 of the same year. The name is from that of the chief river; the nick name is "Bear state." The boundary of A. is the Mississippi river up to 36°, where the n. boundary runs w. to the St. Francis river, and n. up that stream to the famous political line dividing free from slave territory or 36° 30' n.; thence directly w. to the s.w. corner of Missouri, and then s. on the line of the Indian territory, about 94° 30', to Red river; then e. a short distance with the river, then s. direct to the n. line of Louisiana 33°, and finally e. on that parallel to the Mississippi river. The area of A. is 52,198 sq. m.. The surface in the e. is level and broken with swamps, bayous, and small lakes, large tracts being subject to overflow when the Mississippi is high. In the central portion are hilly and rolling lands, and w. and n.w. are wide prairies. There are no mountains of importance in the state; the Ozark hills rise 1500 to 2000 ft., and there are isolated peaks reaching 3000 ft. The Arkansas river crosses the state from n.w. to s.e., and is navigable throughout; the other rivers of the state are St. Francis, White, Big Black, Washita, and Saline. The Red river enters the s.w. corner, and for a short distance forms the boundary between A. and Texas. More than half the counties of A. are bordered or traversed by navigable streams, and the whole state is well watered. There are no lakes worth naming. The surface in the n. and w. is rolling and beautiful.

The search for precious metals in A. has not been successful; but there seems to be a large supply of lead, of paying quantity, in some places yielding 70 per cent of metal to the ton of ore, with 50 oz. of silver besides. There are also ores of copper, zinc, manganese, and iron, some of the latter ores being of the very best quality. Coal deposits underlie nearly 8,000,000 acres in the state, the coal being slightly bituminous and easily mined. Beds of lignite have been discovered; also pink and gray marble, slate of first quality, and the excellent Arkansas oil-stone. There are also grit, or millstone, and grindstone, porcelain clay, mineral ochers, granite and other building stone, salt and marls. Mineral and medicinal springs are found, and the hot springs, at the town of that name, 60 m. s.w. from Little Rock, have a world-wide fame. There are more than 50 of them, varying in temperature from 93° to 148°, largely impregnated with carbonic acid and various alkalies and carbonates, and supposed to be of benefit in many chronic diseases. Similar springs are found in other places in the state, and in Fulton co. there is an immense fountain charged with carbonic acid or other effervescing substance, constantly in action and of even temperature (60°) at all seasons. This spring discharges about 15,000 bbls. of water every hour.

Except along the swampy grounds near the Mississippi, the climate of A. is pleasant and healthful. Malarial diseases occur, but the dreaded yellow fever, which so often devastates the eastern side of the Mississippi, is seldom violent in A. The greater part of the state is exceptionally salubrious, as the mortality records of the census show. Vegetation is prolific. There are large forests of cypress, oak, pine, red cedar, black-walnut, sassafras, locust, maple, and mulberry trees. The orange grows to great size. Besides these we find beech, sycamore, ash, elm, hickory, cotton-wood, hackberry, willow, holly, butternut, box-elder, plum, dogwood, palmetto, ironwood, laurel, juniper, scrub oak, hazel, sumac, etc., and occasionally cane-brake. There are wild plums, haws, persimmons, pawpaws, whortleberries, and chinquapins. Of cultivated fruits peaches, apples, apricots, nectarines, cherries, grapes, strawberries, etc., abound. Corn and all the cereals are easily grown, and bring large returns; but cotton-raising is the leading business, and cotton is grown in all parts of the state. There are many varieties of native grasses, and hay is one of the most important crops.

A. has still much forest area, and game remains in large supply; such as the deer, bear, turkey, prairie-hen, and quail. Fish are plentiful in the streams and bayous, where very rarely an alligator may be found. In the lowlands are many reptiles, and moccasin and rattle snakes inhabit the hills in some sections.

The railroads in A. at the opening of 1879 were: the A. Midland, 48 m., Helena to Duncan and Clarendon; the Hot Springs, 25 m., Malvern to the springs; Little Rock and Fort Smith, 165 m., L. R. to F. S.; Little Rock, Mississippi River and Texas, 100 m., Arkopolis to Pine Bluff and Collins; Memphis and Little Rock, 133 m., Hopefield to L. R.; St. Louis, Iron Mountain and Southern, 304½ m., St. Louis to Texarkana on the Texas line. The Memphis and Little Rock railroad will be a part of the Southern Pacific, when that enterprise is completed.

Seventy-nine newspapers and magazines were published in A. at the beginning of 1879; 7 daily, 70 weekly, and 2 monthly. A. has 216,475 children of school age—6 to 21 years.—

of whom 33,747 were enrolled in 1878. The school fund amounted to \$168,236; income, \$256,450; expenses, \$148,392. There were normal departments in the industrial university at Fayetteville, and in the university at Pine Bluff. There are four colleges in the state: Arkansas college, Presbyterian, Batesville; Cane Hill college, Cumberland, Presbyterian, Booneboro; Judson university, Baptist, Judsonia; and St. John's college, non-sectarian, Little Rock. There is also an industrial university at Fayetteville. In all the colleges there were 35 instructors and 204 students. Both sexes are admitted to all except St. John's.

Probably no other of the states has less of written history than A. Doubtless the first European on its soil was De Soto, or some of his men, and there is a belief that the great explorer was buried in the Arkansas and not in the Mississippi. The Spaniards left no marks; they were searching for gold, and did not attempt to settle. The French, however, who came with or followed Bienville, made a settlement about 1680, near the junction of the St. Francis with the Mississippi. In 1720, Louis XV. granted to John Law, the notorious Scotch speculator, 12 sq.m. of land on the A. river, on condition that he would settle upon it 1500 German immigrants, and maintain at his own expense a sufficient force to protect them against the Indians. This was a small part of the famous "Mississippi scheme," but the settlement of Germans was not made; 200 Alsations came over, and 500 negroes were imported from Africa shortly before Law's failure, and they settled at Cote d'Or, 80 m. from New Orleans. It was long after the revolution that a permanent settlement was made within the bounds of A., which was French territory till 1803, and when the territory was organized, in Mar., 1819, by congress, the entire pop., excluding Indians, was less than 1000. But even then the printing press was on its way, and in Nov., 1819, the *Arkansas Gazette* was started at Little Rock.

A. was one of the first of the seceding states, voting for a convention on the subject in Jan., 1861; in favor, 27,412; opposed, 15,826. The state officers anticipated the business by seizing upon fort Smith and the federal arsenal, at Napoleon and Little Rock. In May, 1861, the convention adopted, with but one negative vote, an ordinance of secession, but did not submit it to the popular vote. The confederates were defeated at the battle of Pea Ridge in Mar., 1862, and again, under Hindman, Dec. 7, 1862, at Prairie Grove. The union forces captured Arkansas Post, Jan. 11, and Little Rock, Sept. 10, 1863. A diversion against the rebellion was made in 1864, when nearly two thirds of the counties in the state were represented in a convention at Little Rock. A constitution was adopted and voted upon a few weeks later, 12,177 being for it, and 226 opposed. Congressmen and local officers were chosen, and a regular state government was organized in April. In this manner, A. practically returned to the union a year before the end of the rebellion. Under the reconstruction acts, a convention to frame a constitution was elected in Nov., 1867, and in the following Mar. the present constitution was indorsed by a small majority of the popular vote. Near the close of 1868, several counties were declared to be in insurrection, and were put under military rule, in consequence of the frequency of outrages upon individuals.

The state capital is at Little Rock; the governor is chosen for two years, and has a salary of \$3500 per year. Legislative sessions are biennial, and limited to 60 days. The three electoral votes of A. were given first in 1836 for Van Buren and Johnson; 1840, for Polk and Dallas; 1848, for Cass and Butler; 1852 (4 votes), for Pierce and King; 1856, for Buchanan and Breckenridge; 1860, for Breckenridge and Lane; 1864, no vote; 1868 (5 votes), for Grant and Colfax; 1872 (6 votes, not counted); 1876, for Tilden and Hendricks.

ARKAN'SAS, a co. in Arkansas, on the Arkansas and White rivers; 1260 sq.m.; pop. '70, 8268—4212 colored. It is level, with good prairie and river lands, producing corn and cotton. Co. seat, De Witt.

ARLINCOURT, VICTOR, Viscount d', 1789-1856; a French author. He wrote *Charlemagne, ou la Caroleide*, an epic poem; and *Le Solitaire*, a novel; both moderately successful.

ARLINGTON, a t. in Massachusetts, 7 m. n.w. of Boston, with which it has connection by steam and horse railroads. Market gardening and ice-cutting are leading occupations. A. is an attractive suburban t., and has a public library, a savings bank, five or six churches, a newspaper, and some manufacturing business. It was formerly called West Cambridge. Pop. '70, 3261.

ARMAGED'DON, the name given to the whole or part of the great plain of Esdraelon, which was famous among the Israelites for two great victories—of Barak over the Canaanites, and of Gideon over the Midianites; and for two serious disasters—the death of Saul in battle with the Philistines, and the death of Josiah during an Egyptian invasion. The battles of Gilboa and Megiddo, of Kishon and Jezreel, were fought on this plain. In all history A. has been a famous battle ground from the time of the wars between Assyria and Egypt down to Napoleon's eastern campaign; thence the seer in the book of the Revelation used the name as symbolical of the scene of "the great day of the Almighty," or of the tremendous final conflict between good and evil.

ARMAG'NAC, BERNARD VII., Count d', constable of France, leader of the "Armagnacs" in 1407. He took possession of Paris, and ruled so oppressively that the populace rose, June 12, 1418, and murdered him with all of his faction whom they could reach.

ARMAG'NAC, JEAN V., Count d', b. about 1420, grandson of Bernard; a notoriously passionate and wicked man. He publicly married his own sister, who had been engaged to Henry VI. of England. Charles VII. took away his possessions, but they were restored by Louis XI., a service repaid by A. in joining the "league for the public good" against the king. He was driven into Aragon, and his estates forfeited, but the king's brother secured them again for him. He was at last captured by the king's soldiers, who put him to death, and, according to tradition, compelled his wife to drink of some drug that killed her and her unborn child.

ARMAND, CHARLES, Marquis DE LA ROUARIE, 1756-93; a French soldier, who left France in consequence of fighting a duel about an actress, and volunteered in the American army, receiving the rank of colonel. He fought at Red Bank, also at Camden, under Gates, whose conduct he severely censured. He was at Yorktown, and was made brigadier-general in 1783. Returning to France, he was in the revolution, and was imprisoned in the bastille; but was afterwards a royalist leader in Brittany and Anjou. He d. soon after the execution of Louis XVI., it is said from nervous disease occasioned by the shock of that event.

ARMINIUS. See HERMANN, or HERMAN, *ante*.

ARMITAGE, EDWARD, an English historical painter, b. May 20, 1817. He was educated in Germany and France, and was a pupil of Delaroche in 1837. In 1843, he gained the first prize for cartoons, and in 1847 a prize for oil painting. His more noteworthy frescos are in St. John's (Roman Catholic) church in London, and in the new houses of parliament.

ARMITAGE, THOMAS, D.D., b. England, 1819; came to America in 1838, and entered the ministry of the M. E. church. Ten years later he became a Baptist, and he is now settled over a church of that denomination in New York. He was active in the organization of the American Bible union, and a strong advocate of the revision of the Bible with a view to bringing out what he thought the correct interpretation of the words which relate to baptism. He ministers to a strong and active congregation.

ARMSTRONG, a co. in w. Pennsylvania, on both sides of Alleghany river; 750 sq.m.; pop. '70, 43,382. It has a rough and hilly surface, but good lands in the river valleys. The products are salt, iron, coal, and limestone. Two railroads border or intersect it. Co. seat, Kittaning.

ARMSTRONG, JOHN, d. 1795; b. Penn.; leader of the successful expedition in 1756 against the Indian allies of the French at Kittaning, Penn. In the revolutionary army he was a brig.-gen. at fort Moultrie, and commanded the militia at Brandywine and Germantown. He served twice in the continental congress, 1778-80 and 1787-88.

ARMSTRONG, JOHN, 1758-1843; an American soldier and writer. While a student he volunteered, was soon made aid-de-camp to gen. Mercer, and was with Gates in the Burgoyne campaign, leaving the service with the rank of major. He wrote the *Newburgh Letters*, setting forth the hardships of the revolutionary soldiers in respect to pay. He was attorney gen. of Pennsylvania; United States senator from New York, 1800-4; minister to France, 1804-10; brigadier-gen. in the war of 1812; and secretary of war, 1813-14. He was charged with inefficiency in consequence of the capture of Washington, and resigned, Sept., 1814. He published a *History of the War of 1812*, *Memoirs of Montgomery and Wayne*, a *Review of Gen. Wilkinson's Memoirs*, and partially prepared a history of the revolution.

ARMSTRONG, RICHARD, D.D., 1805-60; b. Penn. He graduated from Dickinson college in 1827, studied theology at Princeton, and in 1832 went to the Sandwich islands as a missionary. In the Hawaiian government he was minister of instruction, presided over the board of education, and acted as privy counselor.

ARMSTRONG, WILLIAM JESSUP, D.D., 1796-1846; b. N. J.; an American Presbyterian clergyman. He was pastor of the first Presbyterian church in Richmond, Va., 1824-34; afterwards secretary of the American board of commissioners for foreign missions until his death. His life and sermons have been published. He lost his life by the wreck of the steamboat *Atlantic* on Long Island sound.

ARMY REGISTER, the official list of the United States army, published annually, showing the position, rank, and duties of officers, regiments, companies, etc., with the promotions and casualties during the preceding twelve months.

ARMY, UNITED STATES. See UNITED STATES ARMY.

ARMY-WORM, in the northern states the larva of a noctuid moth, *heliophila unipunctata*. It grows to nearly 2 in. in length; its appearance varies with the successful moultings, as is common with caterpillars, but when grown it is dark gray marked with three yellow stripes above, and a broader one of the same color along each side. The moth is light chocolate brown, bearing a white dot in the center of each fore-wing. Two generations appear each summer; occasionally in so great numbers as

to cause serious damage. Their ravages may be checked in a measure by surrounding the field where they are found by a double furrow, or a ditch, and crushing those that fall in.

The southern army or cotton worm, *aletia argillacea*, is a much more troublesome visitor. The larva is a semi-looper, yellowish green; the segments of the body are ornamented with black dots, appearing as warts under the microscope, some of them supporting hairs. In some specimens a dorsal line is visible. There are three broods in the same season, and the latter is often very destructive to the cotton plant. The imago somewhat resembles that of the northern worm, but is sligher, and lacks the white dot. It flies as far n. as the great lakes.

ARNAUD, HENRI, 1641-1721; historian of the Vaudois, pastor and painter; a native of Piedmont. Encouraged by the English revolution and the enthronement of William III., and probably with pecuniary assistance from England, A. undertook to bring back to their native valleys the Vaudois expatriated by Victor Amadeus of Savoy. In Sept., 1689, he led about a thousand of the exiles into the valley of the San Martino, though opposed by a superior force; but being in danger of attack by 20,000 troops, he retired to the high table-land of the Balsille, making such fortifications as he could. Here he was assaulted, May 2, 1690, by 22,000 French, whose failure was so complete that A. lost not a man, while the French were almost decimated. A. did not risk another fight, but withdrew to Angona, and, just when final capture seemed assured, he learned that war was begun between France and Piedmont, and that the Piedmontese king had suddenly become a friend of the exiles, ready to receive them. The Vaudois were at peace in their valleys until the war of the Spanish succession began, when A. and his men did good service against France; but when that was over, the king of Piedmont again leagued with France against them, and 3000 Vaudois were expelled, finding an asylum in Würtemberg. A. was invited to England by William III., but preferred to remain pastor among his exiled countrymen at Schönberg, where he wrote his *Histoire de la Glorieuse Rentrée des Vaudois dans leurs Vallées*, dedicated to queen Anne.

ARNAULD, HENRI, 1597-1692; bishop of Angers. He abandoned the bar for the pulpit, and in 1645 was mediator between Innocent X. and the Barberini (a powerful family, one of whom was a cardinal), and for his success a medal was made and a statue set up in his honor. In 1649, he was made bishop, and became a strong Jansenist, being one of the prelates who refused to sign an acceptance of the bull against that heresy. He was remarkable for close attention to duty, limiting his sleep to five hours. His *Negotiations at the Court of Rome* furnishes five volumes of curious information and gossip.

ARNAULD, JACQUELINE MARIE (usually called by her name in religion, MARIE ANGÉLIQUE DE SAINTE MAGDELEINE), b. 1591; second daughter of the celebrated advocate, Antoine Arnauld. In her 9th year she assumed the dress of a novice; and, concealing her age, her father induced the pope to nominate her abbess of Port Royal when she was a little over 11 years old. At first she disliked her situation, but a sermon in 1608 fully converted her, and she passed at once to the severest convent discipline. She speedily became famous for piety, and when Madame d'Estrees, abbess of Maubisson, was removed for gross misconduct, Angélique received charge of the convent. In 1623, she returned to Port Royal, and three years later the community removed to the house known as Port Royal de Paris, where she fulfilled a long cherished desire in resigning her dignity of abbess. She was afterwards superior of a new religious community in Paris; then prioress at Port Royal, where her sister Agnes was abbess; and in 1648, she, with a few companions, did much kindness to the poor who were oppressed by the civil wars. She d. in 1661, just before the storm of persecution reached her home.

ARNAULT, VINCENT ANTOINE, 1766-1834; a French dramatic author. In 1797, the first council sent him to the Ionian islands on diplomatic business, and for a time he lived in Venice. That city suggested *Les Vénitiens*, produced in 1799, and favorably received, particularly by Napoleon, before whom A. gave lectures on the old city of the doges. He was advanced by Napoleon to offices in the academy and the university. Besides his early tragedies, *Marius à Minturnes*, *Lucrece*, and *Les Vénitiens*, he wrote works in prose, poems, fables, and *Vie Politique et Militaire de Napoléon*, and assisted in the *Nouvelle Biographie des Contemporains*.

ARNIM, GISELA VON, a German authoress, daughter of Bettina von A. and wife of Hermann Grimm. She is known by her dramatic works.

ARNIM, or ARNHEIM, JOHANN GEORG, Baron von, 1586-1641; a diplomat and general in the thirty years' war. He was in the Swedish army under Gustavus Adolphus, but, though a Protestant, Wallenstein, in 1626, induced him to join the imperial side, and to become his close friend and ally. After Wallenstein's dismissal, A. went over to the elector of Saxony, and led the left wing of the Saxon and Swedish armies in the battle of Leipsic. Upon Wallenstein's restoration, in 1632, the old friends were opponents in the field; but as little was done by either, they were suspected of playing into each other's hands. Wallenstein was assassinated in 1634, and A. began active operations, gaining a great victory at Liegnitz; but after the peace, not deeming himself

properly honored by the elector, he retired to his castle, where he was taken by the Swedes and imprisoned in Stockholm. He escaped, but died very suddenly while raising an army to revenge his wrongs.

ARNOBIUS, called Afer, and sometimes "the elder," an early Christian writer, about the first part of the 4th c., a native of Numidia, in Africa. He was a teacher of rhetoric, and at first an opponent of the Christians, but was converted in his early years. His fame rests chiefly upon his great treatise in seven books entitled *Adversus Gentes*, in which he answers the complaint against the Christians, that the calamities and disasters of the time were due to their impiety, and had come upon men since the establishment of the Christian religion. A.'s views were tinged with gnosticism and dualism.

ARNOLD, BENEDICT, b. Conn., 1740; d. England, 1801. Soon after the revolution broke out he was commissioned a colonel in the service of Massachusetts, and late in 1775 led a force of 1000 men through the pathless northern forests with the intention of capturing Quebec. At the St. Lawrence river he joined gen. Montgomery, and the attack was made and failed on the last day of the year, A. being severely wounded in the fight, and Montgomery killed. He was made brigadier-general, and in 1776 displayed much skill and courage in a naval fight on lake Champlain, though he was not victorious. It has been surmised that A.'s life and actions were influenced by disappointment in not being made one of the first five major-generals, though he was the next one to receive that rank, in 1777. He was in the battle of Bemis heights, after which he had a quarrel with Gates, who seems to have been jealous of him. In the conflict at Stillwater he fought as a volunteer without command, rushing into the thickest of the fight with the utmost bravery. Here he was again wounded, and forced for some months to retire. In 1778, he commanded in Philadelphia, where he lived extravagantly and went into debt. In 1779, he married the daughter of Shippen, afterwards chief-justice of the state. Charges were made against him, and he was sentenced by court-martial to be reprimanded by the commander-in-chief. Washington was as mild as possible, but A. was greatly chagrined, probably the more so because he had for several months been contemplating treason. In Aug., 1780, he asked, and obtained, command at West Point, the most important patriot fortress, which he offered to surrender to Sir Henry Clinton. The accidental capture of major André, the British messenger, Sept. 23, frustrated the scheme, and A. hastily escaped to the sloop-of-war *Vulture*. He immediately went into the British service and commanded an expedition against Virginia, but did little except destroy property along James river. The only acts of importance for which he was responsible were the burning of New London, and the massacre of the garrison at fort Griswold after the surrender. Near the close of the war he went to England, where he seems to have been held in no high esteem. He was in New Brunswick, in trade, in 1790-92, but soon went back to London, where he died.

ARNOLD, EDWIN, an English author, b. 1831. He taught school in Birmingham, and was president of a Sanskrit college in India, resigning in 1861. His work has been chiefly in periodical literature, though he has produced *Griselda, a drama; Poems, Narrative and Lyrical; Education in India*; a translation of the *Euterpe* of Herodotus; and a metrical translation of *The Hitopadesa*, from the Sanskrit. After his return to England he published a *History of Lord Dalhousie's Administration*, and another volume of poems. He was a correspondent of the *London Telegraph* during the war of the rebellion in the United States, sympathizing entirely with the loyal states, and predicting their triumph. At the death of Thornton Hunt he became chief editor of the *Telegraph*. While at this exacting work he found time to translate a volume of Grecian poems, and to produce his most remarkable work, *The Light of Asia*, a production notable for its exquisite poetry and lofty philosophy, and the vividness and reality with which the scenery, climate, manners, and people of Hindustan, as they were 2000 years ago, have been portrayed. Its full title is *The Light of Asia; or The Great Renunciation; being the Life and Teachings of Guatama (as told in verse by an Indian Buddhist)*.

ARNOLD, JONATHAN, 1741-98; an American surgeon in the revolution. He was a member of the first colonial assembly of Rhode Island; served medically in the patriot army; and was a member of the continental congress, in 1782-84. Late in life he removed to St. Johnsbury, Vt., and was for several years judge of the Orange county court.

ARNOLD, RICHARD, b. 1828; an American general, native of Rhode Island. He graduated at West Point in 1850, entering the artillery. In the war of the rebellion he rose to brigadier-general of volunteers, and in 1866 was made brevet major-general of the regular army.

ARNOLD, SAMUEL, 1740-1802; an English composer; educated under Dr. Nares in the chapel royal, and at 20 years of age appointed composer at Convent Garden theater. Here, in 1765, he produced *The Maid of the Mill*. In 1776 he became composer to the Haymarket; in 1783 was appointed composer to the king, and ten years afterwards organist in Westminster abbey, where he was buried. Among his works are *Inkle and Yarico, Rosamond, The Battle of Hexham, The Mountaineers*; and in sacred music, *The Cure of Saul, The Prodigal Son, Abimelech*, and *The Resurrection*. He left unfinished an edition of Handel's works.

ARNOLD, THOMAS KERCHIEVER, 1800-53; an English clergyman and author of books on the study of languages. In 1838 appeared his elementary series for Greek, Hebrew, Latin, and several modern tongues, which was followed by school classics, all of which became popular in both England and the United States.

ARNOULD, SOPHIE, 1744-1803; a French opera singer. She was the daughter of a hotel-keeper; with a good education, fine voice, and attractive face and form, aided by natural wit, she gained the favor of Madame de Pompadour and other women of the court, and first appeared on the stage at the age of thirteen. She drew around her many of the leading men of the time, even such as Rousseau, Diderot, and Helvétius, and had a triumphant career for more than 20 years. One of her sons was a colonel, and was killed at Wagram.

ARNS'WALDE, or ARENSWALDE, a t. in the province of Brandenburg, 41 m. s.e. from Stettin; pop. '71, 6522. It is noted for the manufacture of linen and woolen goods, chemicals, and church bells.

ARNULF, or ARNULPHUS, a king of Germany, great-grandson of Charlemagne. About 894 A.D., he captured Rome, where the pope crowned him as emperor. He d. in 899, and his son succeeded him as Louis IV.

A'ROLSSEN, a t. in Waldeck, on the Aar, 12 m. n. from Waldeck; pop. '67, 2148. It has many works of art, and a fine library of about 30,000 vols. Kaulbach, the painter, was born here.

ARO'NA, a t. in Piedmont, on the w. shore of lake Maggiore, with a dockyard on the lake, gymnasium, hospital, and a number of churches, in one of which is an altarpiece by Gaudenzio Vinci; pop. 3443. The town has trade with Germany and Switzerland. There is a statue here to count Carlo Borromeo, who was born in the now ruined castle in 1538, and canonized for piety and benevolence. It is of bronze and copper, 110 ft. high, including the pedestal of 44 ft. It is hollow, and four persons can stand in the head, where they get an extensive view through the eyes.

AROOS TOOK, a co. in the extreme n.e. of Maine, bordering on British America; 6800 sq. m.; pop. '70, 29,609. The surface is rough, and there are several mountain-peaks. The St. John's river forms the eastern boundary, and is navigable for light vessels. There are also the Aroostook, the Mattawamkeag, and several smaller streams, with many lakes and ponds. Most of the region is still covered with primeval forests. Co. seat, Houlton.

ARPAD, or ARVAD. See ARADUS.

AR'RAWAKS, or LOKONO, a native tribe, once powerful, in Dutch Guiana, but of peaceful character and friendly with whites. Nearly 200 years ago a Roman Catholic missionary undertook to civilize them, mastered their language, and gave them printed works. The family was the foundation of such government as they had, and descent followed the female line.

ARREST (*ante*). In the United States the laws of arrest are nearly the same as in England. In cases of crime or of a fugitive demanded by the law, any person can make an A. on the spot. In civil matters an A. must be made by an authorized officer, usually a sheriff, or his deputy, or a constable; or in cases in federal court by a marshal; in legislative bodies by a sergeant-at-arms. Certain persons and classes are exempt from A., either generally or in special relations indicated; such as ambassadors and their assistants, attorneys duly acting for their clients, persons giving bail for others, clergymen while performing service, voters attending election, insolvent debtors legally discharged, legislators attending the bodies of which they are members, militia while doing military duty, parties to a suit while attending court, witnesses in such cases, and women in certain cases. Civil A. is unlawful on Sunday or on public holidays, or in presence of a court, or in the defendant's residence. Since the very general abandonment of imprisonment for debt, civil A. has become rare, but is resorted to in case of apprehended frauds, such as concealing property, or absconding. For crime, any person is liable to A. except ambassadors and their official assistants; and any necessary force, even to killing, may be used to accomplish the A.; but it is murder to kill the person who is trying to effect the A.

ARREST OF JUDGMENT (*ante*). Where a plaintiff is not entitled to a verdict, a motion for A. of J. is usual; or if no such motion be made, the court may produce the same effect by suspending its own decision. Under A. of J., all the proceedings are set aside, and acquittal is granted; but this does not bar a new indictment.

ARRHIDÆUS, PHILIP, a son of the father of Alexander the great by a dancing girl of Larissa. He was at Babylon when Alexander d., 323 B.C., and though almost imbecile was elected king, under the name of Philip, with the understanding that a child (then unborn) of Alexander was to be associated with him in the government. The next year Arrhidæus married Eurydice, who thereafter had complete control over him. Two years later he and his wife were captured by Polysperchon, the leader of the cause of Alexander's son mentioned above, and both were put to death by the order of Olympias, the grandmother of the young king. They were afterwards honored with decent burial, and funeral games were celebrated as memorials of them.

ARRIA, the wife of Cæcina Pætus, who, for treason to the emperor Claudius, was ordered to end his own life by suicide. When A.'s husband hesitated, she seized the dagger, drove it to the hilt into her own breast, and then handed it to him, saying calmly, "Pætus, it does not pain me." She fell dead, and the husband at once dispatched himself with the reeking weapon.

ARRIA'ZA, JUAN BAUTISTA, 1770-1837; a Spanish writer and politician. He was secretary to the embassy in London, where he published a poem on the influence of the fine arts. In Spain he was an active monarchist, and occupied an important post in the bureau of foreign affairs. His *Patriotic Poems* were published in 1810.

ARRINGTON, ALFRED W., 1810-67; b. N. C.; in early life a noted Methodist preacher in North Carolina, his native state. He entered the law in 1834, and was a district judge in Texas in 1850. He removed to Chicago in 1857.

ARROWSMITH, the name of a family of English geographers. AARON, b. about 1750, in Durham, earned fame by his large chart of the world on Mercator's projection, and another on the globular projection. He d. in 1823, leaving two sons, AARON and SAMUEL; the former compiled the *Eton Comparative Atlas*, a biblical atlas, and geographical manuals. John A., nephew of the elder Aaron, published his *London Atlas* in 1834, following it with many other elaborate works in cartography. He was one of the founders of the royal geographical society. He d. May 2, 1873.

ARSAMASS', or ARZAMAS, a t. in Russia, at the confluence of the Arsha and Teska, affluents of the Volga; pop. '67, 10,517. It is a manufacturing place, and has annual fairs. A. has 34 churches and 3 monasteries.

ARSENAL (*ante*). In the United States, armories and arsenals were not established until after the revolutionary war; but powder was manufactured in Virginia in 1776. Gen. Washington chose Springfield, Mass., in 1777, as a suitable location for an A., and small arms were manufactured before 1787; an A. was also built in Carlisle, Pa., about the same time. The erection of an armory was begun at Harper's ferry in 1795, and congress ordered three or four more to be built in the same year, still more in 1808, and again after the war of 1812. Congress adopted the plan of having an A. in each state. In 1847 the United States had 2 armories and 17 arsenals; in 1860, 23 in all, 9 of which were enlarged during our civil war, the Springfield armory alone having capacity to complete 1000 muskets per day. The late gen. Rodman, in connection with the ordnance department, made great improvements in the art of casting cannon cooled from within, and the introduction of mammoth grain powder for use in large guns is due to him. Recently it has been decided to concentrate all manufacture of arms in three or four places, where all the regular operations are to be carried on. Rock island A., on the Mississippi, is being built on this principle, and will include, when completed, an A., an armory, powder-works, and a foundry for large guns.

ARSINOË, daughter of Ptolemy Auletes, of Egypt. She escaped from Alexandria when that city was besieged by Cæsar, 47 B.C., and was received as queen by the Egyptians, her brother Ptolemy Dionysius being in Cæsar's hands. The city was taken, and A. was one of the captives led in triumph through the streets of Rome, where the people expressed great sympathy for her. She was liberated by Cæsar and returned to Egypt, but her sister Cleopatra persuaded Antony to have her put to death, 41 B.C., although she had taken refuge in the temple of Diana.

ARSINOË, a city on the w. bank of the Nile, near lake Moeris, s.w. of Memphis. It was called "the city of crocodiles," because of the reverence paid to that animal by its people; but Ptolemy Philadelphus named it A. in honor of his sister-wife. It was in the most fertile district of Egypt. Extensive mounds yet mark its site near the modern town of El Faium. In the later Roman days, A. became the seat of an episcopal see.

ARSINOË, a city near the n. extremity of the Red sea, not far from the present Suez. This was another of the towns to which Ptolemy Philadelphus gave the name of his queen, and all of its revenue was given to her. It was near the eastern terminus of the Nilotic canal, which Ptolemy carried from the Bitter lakes to the head of Heroöpolite bay, or the Red sea. The city was favorably situated for East India trade.

ARS-SUR-MOSELLE, a t. in Alsace-Lorraine, at the junction of the Mance and Moselle, 6 m. s.w. of Metz; pop. '71, 5330. During the Franco-German war it was a place of much strategic importance in connection with the siege of Metz. It has iron mines, forges, and paper-mills.

ARTAX'ATA, the ancient capital of Armenia, on the Araxes, where Hannibal took refuge when Antiochus could no longer protect him. The Carthaginian is said to have superintended the building of that city, which was named from the king Artaxais. It was destroyed by the Romans, 58 A.D., rebuilt by Tiridates, and called Neronia, in honor of Nero, who had granted the kingdom to Tiridates. It was taken and partially destroyed by the Persians in 370, and in 450 it was the seat of an ecclesiastical council over which Joseph, the patriarch, presided.

ARTEMIDORUS or EPIESUS, a geographer who lived about 100 B.C., who voyaged around the Mediterranean, the Red sea, and probably parts of the Indian ocean. He visited Iberia and Gaul, and corrected some of the errors of Eratosthenes. His work (in

eleven books) is nearly all lost, but it was highly prized and frequently quoted by Greek and Roman writers. A few fragments have been found, and an abridgment, made by Marcianus, still exists. From what is known, the loss of A.'s work is deeply regretted, as he gave most minute accounts of the manners and customs of the people which he visited.

ARTEMIS. See DIANA, *ante*.

ARTEMISIUM, the name of the northern coast and of a promontory in Eubœa, opposite the Thessalian Magnesias, and named from the temple of Artemis; belonging to the t. of Histia. Off this coast occurred the conflict of the Grecian fleet with the fleet of Xerxes.—The name also of a mountain between Argolis and Arcadia, now Mt. Turniki, on which was a temple; also of a promontory in Caria, which was crowned with a temple to Artemis.

ARTHABASKA, a co. in Canada, province of Quebec; 850 sq.m.; pop. '71, 17,611. The Grand Trunk railroad intersects. Principal town, St. Christophe d'Arthabaska.

ARTHRITIS, inflammation of the joints, arising from wounds, bruises, or surgical operations, and sometimes without apparent cause. All, or a part, of the joint may be involved, and sometimes the pain is intense, even producing delirium or convulsions. The usual treatment is compression by cloths wet with cold water, rest, cooling diet, and sedatives. In some cases cupping or leeching may be proper.

ARTHIROPODA, the name now used instead of Cuvier's *articulata*. It includes *crustacea*, *arachnida*, *myriapoda*, and *insecta*, but excludes *annelida*. See ARTICULATA, *ante*.

ARTHUR, CHESTER ALLAN, b. Vt., 1830, of Scottish parents. His father was a Baptist minister, pastor of churches in Vermont and New York. Chester was the fifth of seven children; he graduated from Union college in 1848, studied law, and became legal partner of Erastus D. Culver, of New York. In 1852, A. had the management of the Lemmon slave case. The case was carried to the court of appeals, and in every removal was decided for the defendants (the slaves). Charles O'Connor was chief of the opposing counsel. In the case of a colored woman put off from a public car in New York, A. sued the company and recovered exemplary damages. A whig, and follower of Henry Clay, he early joined the republican party and became a leader. When the rebellion broke out, he was intrusted with the arming and subsisting of the troops raised in the state of New York, and was afterwards quartermaster-general, engineer-in-chief, and inspector-general. He was chosen colonel of the ninth regiment for immediate active service, but at the urgent request of gov. Morgan, declined the place, his military duties in the state being more important. Under his supervision 68 regiments of infantry, 6 battalions, and 10 batteries were sent to the field in four months in 1861. In 1871, he was appointed collector of the port of New York, and four years afterwards was reappointed with universal approval. He resigned after six years of service. In 1880, he was nominated as the republican candidate for vice-president.

ARTHUR, TIMOTHY SHAY, b. N. Y., 1809; an American story-writer. He has written a great number of moral and domestic tales and sketches which once enjoyed much popularity.

ARTHUR, WILLIAM, b. Ireland, 1819; an author and clergyman in England and Ireland. He was three years in India as a missionary; afterwards secretary of the Wesleyan church missionary society, and president of the British conference; in 1867 was chosen principal of the Wesleyan college in Belfast. He is the author of *Personal Reminiscences of a Mission to the Mysore*, *The Successful Merchant*, *The Tongue of Fire*, and other works.

ARTICLES OF WAR (*ante*), the name given to the act of congress, approved April 10, 1806, establishing rules for the regulation of the U. S. army; and to the act of 1864, superseding that of 1802, for the government of the navy.

ARTIFICIAL HORIZON, a reflecting surface, usually of quicksilver in an open dish, useful in finding altitude when the natural horizon is indefinable, and in determining the zero for all instruments by which altitude is measured.

ARTIGAS, JOSÉ, 1755-1851; a Montevidean officer and dictator. At an early age he went into service in Buenos Ayres in the insurrection against Spain, and won a number of victories. He then joined the republican army besieging the Brazilian troops occupying Montevideo, but he acted so independently that the director outlawed him. A. then organized a force of *gauchos* (cattle-drivers), defeated the troops sent against him, and forced the junta to give him the whole of Uruguay, and recognize him as an independent chief. He drove the Portuguese out of Montevideo, became dictator, and in 1815 made an unsuccessful effort to take Buenos Ayres. He was defeated from time to time, and in 1820 fled to Paraguay; but the dictator there sent him to Candelaria, where he passed the remainder of his life in peace as a political exile.

ARTILLERY (*ante*). The history of A. may be said to date from the discovery of gunpowder, which is popularly attributed to Roger Bacon and Barthold Schwarz, two monks of the 13th c., although a mixture of niter, charcoal, and sulphur, was used for explosive purposes by the Chinese during the 9th century. Its introduction into Euro-

pean warfare is due to the Moors, for mention is made of A. at Cordova in 1280. Ferdinand IV., of Castile, took Gibraltar with A. in 1309, and cannon were used at the sieges of Baza, Martos, and Alicante. This arm soon became known throughout Europe. The French availed themselves of it at the siege of Puy Guillaume in 1338, and the English had three small guns at the battle of Crécy in 1346. In the French war of independence against the English, A. was much used; and in 1428 Joan of Arc is said to have pointed the guns herself. The guns of the 14th c. were of the rudest design; in the 15th c. Charles VIII. of France used an improved A. in his Italian campaigns, and to this arm also Louis XII. largely owed his success in Italy. Henry VII. and Henry VIII. of England did much for its advancement. During the 16th c., brass guns and cast-iron projectiles were adopted throughout Europe, while Tartaglia in Italy made great improvements in gunnery, and invented the gunner's quadrant. During the latter part of this century case-shot, the German *hagelkugel*, was invented, and shells were fired from mortars. The first half of the 17th c. forms an era in the history of A. Henry IV. of France was among the first to recognize its coming importance, and occupied himself diligently with its improvement. Maurice and Henry Frederick of Nassau made much advancement in it, but it was under the great Swedish warrior, Gustavus Adolphus, that A. first began to take its true position on the battle-field. He attached two guns to each regiment, and may, therefore, be said to be the father of the battalion system of guns; he proved its utility in the celebrated thirty years' war. During his life he did much to forward the science of A., increasing its mobility and its rapidity of fire, and raising the proportion of guns to over 6 for 1000 men. In England the laboratory at Woolwich was established in 1672, and a reorganization of the A. took place in 1682 under the master-gen., Lord Dartmouth. Louis XIV. established a special A. force, raised in 1671 a regiment for A. duty, and in 1690 founded the first A. schools. The inventions of the elevating screw, the prolonge, and the priming tube filled with powder, were made during his reign. The Prussian A. was very backward during the first part of the 18th c., and Frederick the great did not at first place much value upon its services. Although it contributed much to Frederick's victory at Rossbach, it was usually no match for the well-handled Austrian guns, which fact impressed him with the importance of giving more attention to this branch. He therefore raised the proportion of guns, and established horse A. in 1759. After the seven years' war the Austrians recognized the importance of the A. in modern warfare, and prince Lichtenstein was commissioned to reorganize it. The experience of Frederick's wars was best utilized by France, and under Gribeauval, in 1765, great reforms in the French A. were commenced. This officer had been sent to Austria during the seven years' war, and had held command under prince Lichtenstein. Struck with the improvements effected in Austria, he strove on his return to build up a complete system, as to both persons and material, making a separate provision for field, siege, garrison, and coast A. At first his reforms met great opposition, but in 1776 he became first inspector-general of A., and was able to carry through his improvements. The French horse A. dates from 1791, and the last step in the complete organization of the field A. was made in 1800, when the establishment of a driver corps of soldiers put an end to the old system of horsing by contract. Napoleon, who was a great A. officer, introduced the tactical combination with brilliant success. To his wars we first look for instances of the important effects produced by this arm in that concentration of fire, which in those days was produced only by massing guns. Napoleon III. made A. a special subject of study; and the great treatise upon it, commenced and mainly written by him, is a standard work on the subject. Since the war of 1870-71, in which the French A. proved itself far inferior to the German, the French have been actively engaged in experiments with a view to the introduction of superior guns, and have increased their force of A. by 120 batteries. Similar progress has been made by the other great European powers during this century. The British A. had greatly deteriorated during the 18th c., and was not up to the standard of other countries, but horse A. was formed in 1793, and a drivers' corps introduced the following year. At the commencement of the 19th c., the Prussian A. was powerful rather than mobile; but after the disasters of 1806-7 this defect was remedied, and in 1816 further improvement was made. In 1872 the German A. was reorganized, the field A. of each army corps being augmented to 17 batteries, and divided into two regiments. The Austrian A. has always been pre-eminent both in the excellence of its material and in tactical handling on the field. In 1859, rifled guns were introduced, and in 1861 gun-cotton was substituted for gunpowder, but was soon afterwards abandoned. Russia won special distinction in the Napoleonic wars by the power and good service of its A., and has continued to give great attention to this arm. Having adopted the breech-loading system of Prussia, Russia has increased its field A. from three to four batteries per division, with 38 batteries of mitrailleuses added.

Gen. William F. Barry was the organizer of the A. of the union armies during the rebellion. The aggregate of field-guns was about 15,000, with 40,000 horses and 48,000 men. The number of guns of position used in field-works or intrenched lines during that war was 1200, served by about 22,000 men. There are at present in the regular army of the United States, 5 regiments of A., with 284 officers and 2321 enlisted men. The personal armament of an artilleryman of the mounted batteries, whether field or siege, is a pistol and saber for the sergeants, trumpeters, and drivers; and a saber only

for each cannoneer. Those serving in the sea-coast fortifications have a rifle-musket and the full equipment of an infantry soldier. The material of a mounted battery of the U. S. field A. when on a war-footing is 6 guns, 6 caissons, 1 battery-wagon, 1 traveling forge, and 112 horses; on a peace-footing it is 6 guns, 6 caissons, and 80 horses. The ammunition of a field-battery for active service in war is 400 rounds per gun. The organization of a siege-battery in the U. S. service is 4 guns, 1 battery-wagon, 1 traveling forge, and 60 horses. The ammunition for the siege-battery is 250 rounds per gun. The breech-loading principle was adopted in a clumsy way at the very outset of cannon construction. John Owen first cast brass cannon in England in 1535, and a year or two later they were manufactured in Scotland; but no long guns for firing hollow projectiles at long range by direct fire were known until col. Bomford, of the U. S. ordnance department, invented a cannon in 1812 called a "columbiad," which proved very successful. Iron in some form is the sole metal in use for heavy artillery; cast iron is used for smooth-bore guns and for rifled guns in the United States. Palliser invented a gun with a steel interior tube, strengthened by an exterior casting of iron; and his system became very popular in England; but the inventions of Sir William Armstrong, improved by those of Fraser, proved far superior, and have been generally adopted. Russia, Germany, and other nations have adopted the Krupp system with heavy forgings of steel ingots.

The defense of war-ships with iron armor has caused an increase in the size, weight, and calibers of sea-coast and naval cannon, and the whole method of gun-construction has been altered. Armstrong was the first in England to see the necessity of a change, and his method was improved by Whitworth, Fraser, Palliser, Blakely, and others. Francis Krupp of Essen, Prussia, is the inventor of a new method which proved so successful, that it has been introduced in Germany, Russia, Austria, Belgium, and Spain. The body of the gun is fabricated from a solid ingot of low steel worked under heavy steel hammers, and is strengthened by three or more steel tubes, shrunk upon the central tube of the gun, the last ring, or tube inclosing the breech, being forged in one piece with the trunnions, without a weld. The rings have various lengths, and the gun is diminished in thickness towards the muzzle, not by tapering, but by being turned with concentric steps of diminished heights. Krupp makes all his projectiles and gun-carriages of steel. In the United States, Rodman, Dahlgren, and Parrott have devoted themselves to the art of gun-construction. The Rodman gun is of cast iron; it is cast hollow and cooled from the inside, the exterior being in the mean time kept from rapid cooling by fires built around the gun in the casting-pit. The Dahlgren gun is of iron cast solid, and cooled from the exterior, very thick at the breech up to the trunnions, then diminishing in thickness to the muzzle. The Parrott gun, like the Rodman, is of cast iron, cast hollow, cooled from the inside, and strengthened about the chamber by an exterior tube of wrought-iron bars spirally coiled and shrunk on. It has been suggested that a Rodman gun lined with wrought iron on Palliser's system would prove a highly effective weapon. See BREECH-LOADING ARMS and NEEDLE-GUNS, *ante*.

ARTILLERY COMPANY, THE ANCIENT AND HONORABLE, of Boston, the first regularly organized military company in America, formed in 1637, and copied from the Honorable Artillery Company of London, dating from 1537. The Boston company was chartered June, 1638, has always been vigorously sustained, and is noted for the eminent citizens in its membership. It has an annual parade, sermon, and dinner, formal and dignified. Charles W. Wilder is the present captain (1879). A third and elaborately illustrated history of the company is in preparation.

ARTILLERY, SCHOOLS OF (*ante*). One was established in the United States in 1823 at Fortress Monroe, but discontinued six years later. Another school was started in 1858, but was stopped when the war began in 1861. Near the close of 1867 it was again established. It is commanded by a colonel of artillery, assisted by a lieutenant-colonel and a major. Instruction is both theoretical and practical; and each of the artillery regiments in the regular army has one foot-battery at the school, the officers of the several batteries being the instructors. The term of instruction is one year.

ARTIODACTYLES, even-toed, herbivorous animals, a division of the *ungulata*, or hoofed; as the cow, sheep, camel, etc.; and some omnivora; as the hog.

ARVA, a co. in n. Hungary; 802 sq. m.; pop. '69, 82,364. It is bounded on the n. and e. by Galicia; is mountainous and sterile, but grand in scenic effects. Timber is the main article of export. Chief t., Alsó-Kubin.

ARVAKR ("early awake"), in Norse mythology one of the horses of the sun; the other was called Alsvid, "all scorching."

ARVAL BROTHERS, a priesthood of 12 members anciently elected for life from the highest ranks in Rome, and including the emperor when there was one. Their duty was to offer yearly public sacrifice for the fertility of the fields, and the custom is said to have originated with Acca Larentia, foster-mother of Romulus, who, with her twelve sons, instituted such a festival. Another legend is that the foster-mother lost one of her sons, and Romulus permitted her to adopt him in his place, calling the twelve "fratres Arvales." Though little is said of the A. B. by Roman orators, their records up to a high antiquity as given by themselves, were inscribed on stone. The college consisted of a master, vice-master, flamen, pretor, and eight members; and among their attend,

ants were four boys, who were required to be sons of senators, and to have living parents. Each officer wore a wreath of green, a white fillet, and a white toga bordered with purple. The great annual festival under their charge was in honor of Dea Dia, who seems to have resembled the goddess Ops, wife of Saturn. It occupied three days, between the middle and end of May. On the first day was the ceremony of "touching" samples of old and young grain; on the second day the sacrifice of two white pigs, a cow, and a fat sheep, in a sacred grove beyond the city, followed by blessing, or "touching," samples of grain brought by the people, and after that the dance and song of brotherhood in the temple, and the election of officers for the coming year. On the third day there was a sacrifice in the city. The minor duties of the brothers were to offer sacrifice on the birthday of an emperor, or at the beginning of a consulate, or for escape from danger, or at the starting or ending of a journey, or on occasion of any important event touching the imperial family. On the 3d of Jan. they recited a particular form of prayer for the ruling emperor, and made sacrifice to the male and female deities.

AR'ZACHEL, ABRAHAM, a Spanish Hebrew astronomer of Toledo, who lived about 1060. He determined the apogee of the sun, and wrote on the obliquity of the ecliptic. It is said that his works were in part the foundation of the Alphonsine tables, made by order of Alphonso X. of Castile.

ASBURY, FRANCIS, b. England, 1745, d. Va., 1816; the first bishop of the Methodist Episcopal church ordained in the United States. He obtained rudimentary education in a village school; at the age of 38 was converted; at 14 was apprenticed to a trade; at 16 became a local preacher; at 22 was received by Wesley into the itinerant ministry; and at 26 landed in Philadelphia as a missionary to America. It was but three years after the building of the first Methodist church in the country, and there were only about 600 persons of the faith, chiefly in Philadelphia and New York. When the revolution began, A. sympathized with the people, and while Mr. Rankin, who was his ecclesiastical superior, returned to England, A. remained, though, like many other non-jurors, he was subjected to suspicion, and at one time to imprisonment. After about two years of surveillance the authorities concluded that the scruples of A. and other preachers were not political, but religious, and he was permitted to go free. He improved his opportunity, and when the war closed there were 83 Methodist ministers at work, and the membership reached 14,000. In 1784, the several societies were organized into an Episcopal church, and A. was chosen bishop. Thenceforward his life was devoted to preaching and the superintendence and extension of churches. His labors were incessant, and his biography is itself a good history of the growth of Methodism in America. He never married, lest a wife should distract attention from his great work. He was always poor, and always generous. In 1785, he laid the foundation for the first Methodist college, and afterwards formed an educational plan for the whole country by making districts with at least one classical academy in each. He was rather stout, of medium height, with a fresh countenance and a penetrating eye. Wesley alone was his superior as a practical worker and organizer, and the two were alike in zeal and spirit. During his ministry it is estimated that A. traveled more than 270,000 m., visiting every part of the country; preached more than 16,000 sermons, ordained over 4000 ministers, and presided at 224 conferences. It is to the labors of this indefatigable apostle, more than to any other human cause, that Methodism in America owes its excellent organization and wonderful growth. His only written works were his journals in 3 vols., which are personally and historically of great value.

ASCENDANT. In astrology, the easternmost star in a horoscope is the A., or "house of life." It was deemed to have the most influence on destiny, or to give the strongest indication of the future; so it is said when one's prospects improve, "his star is in the ascendant."

ASCENSION, a parish in s.e. Louisiana, on both sides of the Mississippi, s.w. and w. of Amite river and lake Maurepas; 420 sq.m.; pop. '70, 11,577—7310 colored. The soil is alluvial and frequently inundated, but is extremely productive in corn, cotton, rice, sugar, and molasses. Chief t., Donaldsville.

ASCHE. RABBI, b. at Babylon, 354 A.D.; the first and principal editor of the "Talmud," on which he worked 30 years, leaving the finishing to his disciples, Abina and Jose. He was a man of great learning.

ASCIANS. or ASCII, people near the equator, who have the sun over their heads, and consequently have no visible shadow, twice a year.

ASCLEPI'ADÆ, an order of men in Greece of whom the most were trained as physicians. They claimed to be descendants of the god Esculapius. In the course of their initiation and progression the Hippocratic oath was a part of the ceremony. At the close of their studies they had a ceremony of consecration, after which they were allowed to practice the healing art.

AS'COLI DI SATRIA'NO, a t. in Italy on the e. slope of the Apennines, 65 m. e.n.e. of Naples; pop. 6500. It was the ancient *Asculum Apulum*, and near it Pyrrhus defeated the Romans, 279 B.C. Here too, in 1190, Tancred defeated the forces of Henry VI. Remains of the Appian way can yet be seen near the town.

AS'COLI-PICE'NO, one of the four provinces of the Marches, in central Italy, formerly in the papal territory; 809 sq.m.; pop. '72, 203,091. In the province are branches of the Apennine mountains, and four or five small rivers. Wine, oil, honey, corn, fish, silk, and wool are produced. Chief town, Ascoli.

ASCOT HEATH, an English race-course in Berkshire, 26 m. from London, near the London and Southern railroad. The annual meeting in June is, for a large portion of the public, one of the important events of the year.

ASCUTNEY MOUNTAIN, a rocky mass, 3300 ft. above sea-level, in Windsor co., Vt. Its top presents a splendid panorama.

AS'GARD (from As, "god," and gard, "home"), the home of the Norse gods, or the Scandinavian Olympus. It was said to stand in the middle and highest part of Ida's plain, which is the center of the universe. There the Æsir (gods) built a court, or hall, with seats for twelve, and one high-seat for Odin, the all-father; and also a lofty abode called Vingolf, for the goddesses. The gods worked diligently, played at games, were rich in precious things, and happy until three maidens from Jötunheim, "giant's world," crossed the plain and entered Asaheim, when corruption began to spread among the inmates. A. had many mansions, the largest and noblest of which was Gladsheim, "home of gladness," while another not so large, but fairer and brighter than the sun, was called Gimli. The latter mansion will stand when heaven and earth shall have been destroyed by fire, and will be the dwelling-place of brave and upright men. There is a historical explanation of this myth: that Asaheim was a country east of the Don in Asia, where there was a city of Asgard in which ruled a chief named Odin, or Woden; that Odin, fearing subjection by the Romans, led his people across Russia to Sweden and settled at Sigtuna (Upsala); that his priests or chief men founded other settlements, and established the worship of their ancestors; that in lapse of time the man Odin and his chiefs came to be looked upon as gods. No date can be settled for such a migration; but from 120 to 80 B.C. has been thought probable, for then Mithridates Eupater was defying the armies of Rome. The Norse civilization and religion were undoubtedly of Aryan origin. See ÆSIR.

ASHBY, TURNER, a confederate officer in the rebellion, celebrated as a leader of cavalry. He was made a brigadier-general in 1862, and was killed in June of that year in an engagement near Harrisonburg, Va.

ASHE, a co. in n.w. North Carolina, bordering on Tennessee and Virginia; 300 sq.m.; pop. '70, 9573—532 colored. A mountainous region, good for grazing, but not for crops. Co. seat, Jefferson.

ASHE, JOHN, 1721—81; an American general in the revolution; b. England, came to America 1727. He was a representative in the North Carolina colonial assembly, and presiding officer for three years. It is said that he was the first man to suggest the provincial congress, of which he was a prominent member. He joined the army early in the war, and led a force, in 1775, to take fort Johnson. He was with gen. Lincoln in 1779, and was defeated by Prevost at Briar Creek. In 1781 he was a prisoner of war, but on parole.

ASHER, the eleventh of Jacob's sons and the third by Zilpah, Leah's handmaid; founder of one of the twelve tribes of Israel. His birth is assigned to 1914 B.C. Gad was A.'s full brother. When they left Egypt the tribe of A. was the ninth in strength, numbering 41,500; when they entered Canaan they had increased by 11,900, and become fifth in size. Their geographical position was along the sea-shore from Carmel, with Manasseh on the s., Zebulon and Issachar on the s.e., and Naphtali on the n.e. The tribe had become unimportant in the time of David, perhaps dispersed among the Sidonians whom they could not subdue. Asher had four sons and one daughter.

ASHIKAGA, a line of military rulers (sho-guns, or "tycoons"), or lieutenants of the mikado, who ruled Japan, 1335—1573, the last being overthrown by Ota Nobunaga. Under the A. feudalism was developed in great splendor and complexity, and the custom of wearing two swords became general among the military class. One of the A. accepted the title of Nihon-o (king of Japan), from the emperor of China, thereby earning the execration of posterity, and giving rise to the impression among European writers that Japan was tributary to China.

ASHLAND, a co. in n.e. Ohio, intersected by the Atlantic and Great Western, and the Pittsburgh, Fort Wayne, and Chicago railroads; 390 sq.m.; pop. '70, 21,933. The surface is hilly, but the soil is remarkably fertile in grain, and well-suited to cattle-raising and dairy products. Co. seat, Ashland.

ASHLAND, a co. in n.w. Wisconsin, on lake Superior; intersected by the Wisconsin Central railroad; 2150 sq.m.; pop. '75, 730. Iron ore is found, and there is a ridge, 1300 ft. high, called Iron mountain. Co. seat, Ashland.

ASHLAND, a t. in Schuylkill co., Penn., in the coal region, 12 m. from Pottsville, on a branch of the Philadelphia and Reading railroad. Its people are largely interested in the coal business. Pop. '70, 5714.

ASHLAND, a t., the co. seat of Ashland co., Ohio, on the Atlantic and Great Western railroad, 85 m. n.e. from Columbus. It has miscellaneous manufactures and local trade. Pop. '80, 3000.

ASHLEY, a co. in s.e. Arkansas, bordering on Louisiana; 860 sq.m.; pop. '70, 8045—2764 colored. Corn and cotton are the staples. Co. seat, Hamburg.

ASHTABULA, a co. in n.e. Ohio, on lake Erie; intersected by the Lake Shore and Michigan Southern, and the Ashtabula, Youngstown and Pittsburgh railroads; 720 sq.m.; pop. '70, 32,517. It is drained by the Conneaut and Grand rivers; is level, and adapted to grazing. Among the minerals is a grit useful for grindstones. Co. seat, Jefferson.

ASIA (*ante*). The area and population of A. are given in 1878, in the statistical work of Behm & Wagner, *Bevölkerung der Erde*, as follows:

DIVISIONS AND SUBDIVISIONS.	Area in sq. miles.		Population.	
	Division.	Subdiv.	Division.	Subdiv.
SIBERIA	4,824,500	.....	3,440,362	.....
CENTRAL ASIA.....	1,524,500	.....	7,510,876	.....
Russian Central Asia	1,305,300	.....	4,505,876
Lake Aral	25,900	.....	.....
Territory of the Turcomans.....	79,700	.....	175,000
Khiva.....	22,300	.....	700,000
Bokhara.....	84,000	.....	2,030,000
Karategin.....	8,300	.....	100,000
Kushgaria, Soongaria (with China).....
CASPIAN SEA, exclusive of islands.....	160,666	.....	.....	.....
WESTERN ASIA.....	2,922,700	.....	.....	.....
Caucasia.....	169,450	37,680,000	5,391,744
Turkey in Asia.....	743,486	.....	17,880,000
Samos.....	213	.....	25,873
Arabia (independent).....	968,100	.....	3,700,000
Aden (7.65 sq.m.).....	8	.....	22,707
Persia.....	636,000	.....	6,000,000
Afghanistan.....	278,700	.....	4,000,000
Kafiristan.....	20,000	.....	300,000
Beloochistan.....	106,800	.....	350,000
CHINA.....	4,520,533	.....	434,790,978	.....
China proper.....	1,554,000	.....	405,000,000
Tributary states.....	2,985,500	.....	20,580,000
Hong-Kong.....	32	.....	139,144
Macao (1.48 sq.m.).....	1	.....	71,884
JAPAN.....	146,613	.....	23,623,373	.....
HINDOSTAN.....	1,491,000	.....	243,163,000	.....
British India.....	820,413	.....	188,421,264
Native states.....	551,136	.....	48,110,200
Country of the Himalayas.....	90,400	.....	3,200,000
French possessions (196 sq.m.).....	2	.....	271,460
Portuguese possessions.....	1,437	.....	444,617
Ceylon.....	24,702	.....	2,459,542
Laccadives.....	744	.....	6,800
Maldives.....	2,615	.....	150,000
FARTHER INDIA.....	897,700	.....	36,760,000	.....
British Burmah.....	88,557	.....	2,747,143
Man-poor.....	7,600	.....	126,000
Tribes s. of Assam.....	18,000	.....	130,000
Burmah.....	190,500	.....	4,000,000
Siam.....	309,000	.....	5,750,000
Anam.....	198,000	.....	21,000,000
French Cochin China.....	21,716	.....	1,600,000
Cambodia.....	32,400	.....	890,000
Independent Malacca.....	91,500	.....	200,000
Straits settlements.....	1,446	.....	308,097
EAST INDIA ISLANDS.....	789,893	.....	34,051,900	.....
Sunda and Molucca islands.....	672,479	.....	26,583,000
Philippine and Sooloo islands.....	114,129	.....	7,450,000
Andaman islands.....	2,551	.....	13,500
Nicobar islands.....	725	.....	5,000
Keeling islands (8.5 sq.m.).....	8	.....	400
Totals.....	17,308,000	.....	831,000,000	.....

ASIATIC SOCIETIES, various associations for the study of the languages, antiquities, and history of the eastern continent. The Dutch founded one in Batavia, in 1780; the royal A. society of Bengal was founded at Calcutta in 1784 by Sir Wm. Jones. One at Paris dates from 1822; one in Great Britain, 1823; the A. society of Ceylon was formed in 1845; the German oriental the same year; the A. society of China in 1847; the American oriental society in 1842.

ASINAIS, an Indian tribe in Texas, called "Cenis" in La Salle's works. Missions were established among them by the Spaniards early in the 18th century. They were agriculturists, and lived in large circular cabins, of which some held a dozen or more

families. As a tribe they have not been known since the 18th c. and seem to have been long extinct.

ASKR (Anglo-Saxon, *ask*, an "ash tree"), the name in Norse mythology of the first man created by the gods.

AS'MAI, or ASMAYI, ABU SAÏD ABD-EL-MELEK IBN KORAÏB EL-ASMAÏ, b. about 740 A.D.; preceptor to Harun-al-Raschid, and an important representative of Arabic literature in the 8th century. Sir Henry Rawlinson calls A.'s history of the kings of Persia and Arabia previous to Islam, "perhaps the most valuable and authentic historic volume in the whole range of Arabian literature." His romance of *Antar* has been called "the Iliad of the desert." He d. about 830 A.D., leaving several pupils who became celebrated.

ASMONE'US, or ASSAMONEUS. See MACCABEES, *ante*.

ASÔ'KA, ASHOKA, or DHAR-MA-SOKA, sovereign of India, son of Bindusara, b. about 300 B.C. He attempted to kill his father and was banished, but returned as his father was dying, killed all except one of his brothers, and seized the throne. Conversion to Buddhism quite changed his nature, and he built many monasteries, and left monuments that show his rule to have extended over the greater part of Hindostan.

ASOPUS, the god of the river A., married to Methope, by whom he had two sons and from 12 to 20 daughters. These daughters were carried off from time to time by the gods; but when Zeus took away Ægina, A. rebelled and proposed to fight the abductor; whereupon Zeus immortalized the angry parent by transfixing him with lightning.

ASPENDUS, a city of Asia Minor, on an isolated hill near the river Eurymedon, at the extremity of the plain of Perga. It was founded by a colony from Argos, 500 years before Christ, and reached high prosperity, as the ruins attest. These are: a theater so nearly complete that a little repairing would make it available for its original purpose; a noble aqueduct; a forum, and other buildings. Cicero says that it was rich in statues, but that Lucius Verus carried them away. Twice A. is mentioned in history—when its citizens assassinated Thrasybulus, and when the city surrendered to Alexander.

ASPHALTIC COAL, a coal-like substance in the cavities of the older rocks, having evidently fallen into the fissures while in a liquid or very plastic state. It is considered to be a species of very old asphalt that has lost most of its oil and become compact from age. It is found in carboniferous rocks, in New Brunswick and West Virginia; and in Ohio and Kentucky, in the devonian.

ASPINWALL, WILLIAM, 1743-1823; a surgeon in the revolutionary army. He was celebrated for the practice of inoculation, and his ready adoption of vaccination.

ASPIS, or CLUPEA, an ancient fortified t. of Carthage, about 50 m. e. of that city, on the sea, and having an accessible harbor. Manlius and Regulus landed here in the first Punic war; in the third war the town sustained a siege, and it is noticed in the records of the Julian civil war. It was an important episcopal see from 411 to 646 A.D., and the last place where the African Christians made resistance to Moslemism.

ASPRONTE, a mountain near Reggio, in s.w. Italy, near which, Aug. 28, 1862, occurred the fight between Garibaldi's volunteers and the Italian troops under Pallavicini. Garibaldi was defeated, and he and a large number of his men were taken prisoners.

ASPROPOT'AMO. See ACHELOUS, *ante*.

ASSAB', or SABA, a bay of the Red sea, 40 m. from the Indian ocean. It is about 16 m. long by 5 m. wide; it is bordered on the w. by high land; in its front are two coral islands, one of which, with cape Luna, forms a harbor for small craft. In 1869 an Italian steamship company bought the whole bay for a coaling station between the Suez canal and India.

ASSAROT'TI, OTTAVIO GIOVANNI BATTISTA, 1753-1829, founder of schools for deaf mutes in Italy. He studied for the priesthood and became lecturer on theology to the society of the Pietists. Hearing of the Abbé Sicard's experiments with mutes, he began with a single pupil in 1801, and had slowly gathered a small number, when, in 1808, Napoleon heard of his work and provided a schoolhouse and revenue to support 12 pupils. He kept the school with success until his death. Nothing is known of his methods of instruction.

ASSELYN, JAN, 1610-60; a Dutch painter, pupil of Isiah Vandervelde, and distinguished in landscape and animal pictures. He was one of the first Dutch artists to introduce Claude Lorraine's fresh and clear manner. There are several of A.'s pictures in the galleries of Amsterdam.

ASSEMA'NI, JOSEPH ALOYSIUS, 1710-82; brother of Stephen. He followed in the same studies, rising to be professor in the sapienza, at Rome. He was the author of two religious works.

ASSEMA'NI, JOSEPH SIMON, 1687-1768; a philologist of Syria. He was a collector of oriental manuscripts for the vatican library, and the custodian of the collection. He was versed in eastern languages, and wrote two or three bibliographical works, besides editing the *Opera Ephraemi Syri*.

ASSEMA'NI, SIMON, 1752-1821; he was remotely related to the other noted men of the name, and like them an orientalist, paying especial attention to numismatics, on which theme he published a volume. He was also professor of languages at Padua.

ASSEMA'NI, STEPHEN EVODIUS, 1707-82; nephew of Joseph Simon. He followed his uncle's studies, and was also librarian in the vatican, but was promoted to be archbishop of Apamea. He left a work on oriental manuscript literature, and one on martyrology.

ASSEN, a t. in the Netherlands, 15½ m. by rail s. of Groningen; pop. '67, 6443. A. is on the Horn-Diep, and has canal communication with the Zuyder Zee. Certain tumuli near the place are called "giants' graves."

ASSIGNATIONS, paper currency of Russia, issued by Catherine II., about 1770, to assist in carrying on the war against Turkey. Like similar experiments in other countries before and afterwards, the A. started at par, but rapidly declined to less than 25 per ct. About 20 years later, the A. were the general currency; but traders began to refuse them, and the most stringent edicts of Paul failed to force them into good standing. In the war with Napoleon, heavy issues were made, the value keeping steadily at about four roubles of paper to one of silver. The rate rose somewhat after the peace, and fluctuation became so troublesome that the government fixed the value by special law. In 1839, the silver rouble was made the unit, and the value of A. fixed at 3½ for 1 of silver. At the same time bills of credit were issued which have taken the place of the A.

ASSIGNMENT (*ante*), in American law, a transfer or making over (in writing usually) to another of property in possession or in action, or of any right therein; or the transfer of one's interest in property. Almost any valuable thing, present or prospective, may be assigned: but there are things excepted, such as the commission or pay of a public officer, the salary of a judge, right of action for fraud, rights *pendente lite*, personal trusts, or the duties of a guardian. To be valid in law, the subject of A. must at the time have an actual or prospective existence, although courts may hold an A. good where value rests on possibility only. Negotiable bills are assigned by mere indorsement, and then the holder can sue in his own name. In such case even an equitable defence that might exist between the maker and the original acceptor is barred out. The majority of assignments are made by insolvent debtors for the protection of creditors, and to obtain discharge from further obligation, and these are regulated by special statutes in most of the states. In some of these an A. must be for the benefit of all creditors equally. Personal chattels are usually transferred by bills of sale; sometimes by mere memorandum; any words showing the intent will answer. No consideration is necessary to support A. of a term. An A. of a policy of insurance, by consent of the underwriter, by statute, or otherwise, vests in the assignee all the rights of the assignor; but as such an instrument is not negotiable, the A. is only in equity, and even that may be forestalled by condition to the contrary expressed in the policy. An A. of dower is an act by which the share of a widow in a deceased husband's real estate is set apart for her, and may be made by the heir or his guardian, or the person in possession of the land subject to dower; or after legal proceedings by direction of the court, if voluntary A. be refused.

ASS'ING, LUDMILLA, b. 1827; a German biographer, the daughter of Dr. A., and niece of Varnhagen von Ense. She was taken by her uncle after the death of her parents, and filled the place of a child to him, receiving thereby a superior education. She wrote for newspapers and reviews, and in 1857 a biography of Elisa, countess Von Ahlefeldt. She edited and published, after her uncle's death, two vols. of his *Denkwürdigkeiten*; in 1860, Alexander von Humboldt's letters to, and in 1861-62, the diaries of Varnhagen von Ense. The political matter in the diaries so offended the court, that she was prosecuted as a traducer of the royal family and other persons, and sentenced to eight months' imprisonment. But she had gone to Florence, and the punishment could not be inflicted. She immediately published the remaining volumes of the obnoxious diary, to which the court answered by the form of a trial and sentence to further imprisonment for two years.

ASS'ING, ROSA-MARIA, 1783-1810; a German poetess, sister of Varnhagen von Ense. When young she was a teacher. In 1816, she married Assing, a physician in Königsberg, who took her to Hamburg, where her house soon became the resort of literary people, of whom one of the most eminent was the poet Chamisso. Mrs. A.'s poems were issued in a volume a year after her death.

ASSINIBOINS, an Indian tribe of the Dakota family, dwelling in the United States and British America, on the Montana border. They were once a part of the Yankton Sioux nation, but separated from them nearly 300 years ago, and since then have generally been their antagonists. It is said that the name A. is not used, other Indians calling them Stone Sioux, or Assinipwalak. There are about 5000 in the United States, and rather more in British America, where they extend from Mouse river to the Athabasca. The Methodists and Roman Catholics have missions among them.

ASSISTANCE, WRIT OF, a direction by a proper court to the sheriff to put a party in whose favor judgment has been given, in possession of that to which the judgment declares him entitled.

ASSOCIATED PRESS, a combination of daily newspapers originating about 1850 in New York to procure news by telegraph, or otherwise, and to share the expenses proportionately. Though the cost of dispatches is not a fourth of what it was when the A. P. was formed, the franchise is considered exceedingly valuable. There is also a western A. P., and other associations of less extent. In Europe the collection of news is practically a monopoly in the hands of the successors of baron Reuter.

ASSOUCY, CHARLES COYPEAU D', 1604-79; a French poet, who called himself "the emperor of burlesque," a title which others changed to "Scarron's ape." He was the author of many burlesque works, none of them especially brilliant.

ASSUMPSIT, in law, a comprehensive title for a wide class of actions. *Express A.* is an undertaking made orally or by writing not under seal, or as matter of record, to perform an act or to pay money. *Implied A.* is an undertaking presumed in law to have been made by a party, from his conduct, although he has made no express promise; on the ground that everybody is supposed to have undertaken to do what, in point of law, is just and right. In practice, A. is a form of action for the recovery of damages, for non-performance of a parole, or simple, contract. A. may be distinguished also as *special* or *common*. *Special A.* includes action on written agreements, or for dereliction where a contract exists or may fairly be implied, such as professional neglect on the part of a physician, or by common carriers. *Common A.* is usually an action for satisfaction for goods sold or money lent. Non-A. is the usual plea under which the defendant may give in evidence most matters of defense.

ASSUMPTION, a parish of s.e. Louisiana, w. of the Mississippi; 320 sq. m.; pop. '70. 13,244-6984 colored. It is one of the best sugar districts in the country, the soil being remarkably fertile. The principal town is of the same name.

AST, GEORGE ANTON FRIEDRICH, 1776-1841; a German philologist. He was professor of classical literature at Landshut, and at Munich in 1826. Among his works are a *Manual of Æsthetics*, *Life and Writings of Plato*, and an edition of Plato with commentary.

ASTATIC NEEDLE, a magnetic needle for which the influence of the earth's magnetism has been evaded or neutralized. A needle would become A. if it were placed with its axis vertical at the magnetic pole, and it would point indifferently to any part of the horizon. A needle is usually made A. by fastening below it to the same axis a second needle of equal directive force, having its poles reversed. The influence of the earth's magnetism on the two needles, being equal and opposite, is neutralized, and the pair is then free to respond to any other magnetic influence which may be presented to it. The A. N. is an important part of most galvanometers.

ASTER, ERNEST LUDWIG VON, 1778-1855; an engineer; a lieutenant in the army of Saxony in 1800, and captain in 1809. Napoleon took an interest in his plan for the fortification of Torgau and adopted it, employing A. to superintend the work. A. soon after went into the service of Russia, took the command of a Cossack force, and fought at Bautzen and Leipsic. Returning to Saxon service in 1813, he became a colonel; two years later, in the Prussian engineer corps, he was engaged at Ligny and Waterloo. After the last battle he was promoted to be general, and made inspector of Prussian fortifications, winning a world-wide reputation in the construction of the defenses of Coblenz and Ehrenbreitstein. He was made commander of both fortresses; in 1827, lieutenant-general; in 1842, general of infantry. Ten years afterwards he was made a counselor of state. He left essays and other works posthumously published.

ASTIGMATISM, a defect in vision caused by the refraction of light by the eye differently in different planes. To an eye thus affected a pin-hole in a paper may appear round, but when the paper is moved a little, the circular hole will seem to be an ellipse, and by further removal it will show like a straight slit. A cylindrical or spherico-cylindrical lens will correct this defect in the sight.

ASTLEY, PHILIP, 1742-1814; an English equestrian, learning the art of riding by seven years' service in the cavalry. He established the first circus in London, and there and in Dublin and Paris, with Antoine Franconi, put up nearly 20 theaters or places for equestrian display. He wrote *Astley's System of Equestrian Education*, and two small works on military matters.

ASTOLPHUS, or **ASTULPHUS**, a Lombard king succeeding Rachis, in 749 A.D. He seized upon Ravenna and threatened Rome, but, on petition of pope Stephen II., Pepin of France in 754 crossed the Alps and defeated A., who obtained peace only after surrendering all his conquests. As soon as the French king departed, A. again menaced Rome, and again Pepin came to the help of the pope, shutting A. up in Pavia. While preparing for a new campaign, A. fell from his horse, and died three days later. He left no male heirs.

ASTORGA, a city in the province of Leon, Spain, on a plain 2 m. from the Tuerto river; pop., est., 5000. Napoleon made A. his headquarters while pursuing Sir John Moore in 1809; the next year it was taken by Junot, and in 1812 retaken by the Spaniards. It has a fine, ancient, Gothic cathedral, and around it are the ruins of the old city of *Asturica Augusta*.

ASTORIA, formerly a large village in Queens co., N. Y., now incorporated in Long Island city (q.v.). It is at the junction of the East river and the sound, opposite Hell-gate, and was for many years a favorite summer residence for New Yorkers.

ASTOR LIBRARY, in the city of New York, founded by John Jacob Astor, and largely increased by his son, William B. Astor. The edifice on Lafayette place is excellently adapted to the purpose, and occupies nearly the whole of a lot 235 by 120 ft. It is of brick, of the Byzantine order, finely ornamented with brown-stone moldings. The original library room is 100 by 64 ft., and 50 ft. high, and is reached by 36 marble steps. This building was opened Jan. 9, 1854, but it soon became too small for its purpose, and William B. Astor erected a building adjoining, exactly corresponding in style and size, which was opened Sept. 1, 1859. The A. L. is entirely free, though no book can be taken away. In languages it has no superior in the country. The books are nearly all of practical value, fiction being entirely subordinate to works on history, arts, sciences, etc. From the report for the year 1879, the following facts are taken: The fund for the maintenance of the library is \$421,000, and the endowment amounts to \$1,112,957. During the year, 5869 vols. were added, and the whole number of vols. at the end of the year was 189,114. The number of readers in the halls and alcoves in 1879 was 259,042, a daily average of about 214. Although the number of general readers has doubled in ten years, there was a slight falling off in their number as compared with the previous year, and an increase in the alcove readers. This increase, which has been generally uniform during ten years past, has shown the increasing attractions of the library for study and research, in drawing to it students not only from the city and state, but from colleges and universities in other parts of the country and even from Europe. The trustees report that in Nov., Mr. John Jacob Astor conveyed to the library, by deed of gift, three lots of ground adjoining, 75 ft. front by 100 ft. in depth, and announced his intention of erecting thereon an addition to the present library building, 65 ft. in front by 100 ft. deep, of the same general style as the present edifice. With this addition the library will have a front of 195 ft., and a depth of 160 ft., with an increased capacity for books amounting to 120,000 volumes. The number of readers in the halls had risen from 25,709 in 1872, calling for 78,935 books, to 51,725 in 1879, and 147,112 books. The alcove readers were 5204 in 1870, and 7307 in 1879; the whole number of volumes in the library in 1870 was 140,558; in 1879 it was 189,114.

ASTRUC, JEAN, 1684-1766; a French physician. He had the anatomical chair in Toulouse, became professor after Chirac in Montpellier medical college, regent and professor of the faculty of medicine in Paris, and physician to the king. His attention was given chiefly to venereal and sexual diseases, in which he is regarded as excellent authority, his *De Morbis Venereis Libri Sex* being known in most languages. He wrote also on diseases of women, and on obstetrics.

ASTY'AGES, the last king of Media, son and successor of Cyaxares, 595 B.C. Influenced by a dream, A. gave his daughter Nandane in marriage to Cambyzes, a Persian of eminence; and, again led by a dream which gave him alarm, he sent Harpagus to destroy the child which was the fruit of the marriage. But the child was hidden away by a shepherd, and it was after many years that his existence was brought to the notice of A., who easily discovered the boy's parentage. A. punished Harpagus for deceiving him, and Harpagus instigated Cyrus (the child now grown up) to lead a revolt, through which A. was made prisoner, and Cyrus took the scepter. A. was treated mildly, but kept a prisoner until his death.

ASUAY', ASSUAY, or AZUAY, a department of Ecuador, being all of the s. and e. portion of the republic, on the e. slope of the Andes, between 5° s. and 1° n., and 68° to 80° w.; about 120,000 sq.m.; pop. 243,459. There is a large desert in the west, but the eastern part is fertile, being watered by several affluents of the Amazon. The chief employments are cattle breeding, agriculture, and the gathering of cinchona bark. Loja and Cuenca are the chief towns.

ASUNCION', NUESTRA SEÑORA DE LA, or ASSUMPTION, the capital of Paraguay, 25° 16' s., 52° 42' w., on the e. bank of the Paraguay river; pop. '57, with suburbs, 48,000. The city was founded in 1536, and for more than a century was the capital of all the Spanish territory along the Rio de la Plata. The streets are unpaved, and sidewalks are rare. The houses are chiefly of a single story, and but a few have tiled roofs, the greater number being little better than huts of skeleton bamboo, plastered with mud. There are a cathedral and two or three other churches, from one of which the bones of Dr. Francia, the celebrated dictator, were stolen and taken no one knows whither. The city hall is a tolerable edifice; the government residence is of but one story. There are a quay, an arsenal, and workshops for ship repairing. The place is intensely warm in summer, but not especially unhealthy. In the suburbs are some fine residences; and recently cemeteries have been provided for the dead, hitherto buried under the city churches. A. has railway connection with Axul southward, and with Mercedes and Chivilcoy westward, and a large commerce with the provinces along the Paraguay and Uruguay rivers.

ATACA'MA, a department in s.w. Bolivia on the Pacific; 70,181 sq.m.; pop. 5273. It is mostly a barren, sandy desert, entirely uninhabitable; but in the n. part there are

fertile valleys. The minerals are gold, silver, copper, and iron; and sulphate of soda, alum, and salt are common. Cobija is the chief town, on the Pacific, about 22° s. lat. Northward in the province is the volcano Atacama, 18,000 ft. high.

ATACA'MA, a province in n. Chili; a narrow strip between the Andes and the Pacific, s. of Bolivia; 41,120 sq. m.; pop. '75, 72,446. The copper and silver mines are the richest known; of silver there are about 250, and of copper nearly 1000 mines. Since the discovery of silver by the shepherd Juan Godoy, in 1832, the product has been considerably over \$100,000,000. The town of Chañarcillo is on the site of the silver discovery, 51 m. s. e. of Copiapo, the capital of the province, with railway connection. The first railway built in South America connects the capital with Caldera, the best ocean port of Chili.

ATASCO'SA, a co. in s. Texas on the upper branches of the Nueces; 1262 sq. m.; pop. '70, 2915. The climate is good, soil sandy and easily cultivated, but stock-raising is the main business. Co. seat, Pleasanton.

ATAULPHUS, ATAULF, or ADOLF, the brother-in-law of Alaric, and his successor as king of the Visigoths. He assisted Alaric in the siege of Rome, and after A.'s death went to Gaul, taking as a captive Placidia, sister of the Roman emperor Honorius; and she afterwards became his wife. Jornandes says A. took Rome a second time, carried off Placidia, and made a treaty with Honorius which was solemnized by the marriage with Placidia in the forum; that A. was a faithful ally of Rome in Gaul, and went to Spain to suppress insurrections of the Vandals, where, according to others, he was assassinated.

ATAVISM, in physiology, the resemblance of a man or other animal to a remote progenitor, as a man who resembles his great-grandfather and not the intermediate parents. Watson, in a lecture on the practice of medicine, cited this case: A deaf-mute married a woman whose hearing was normal; they had two children; a deaf-mute son who left no children, and a daughter with perfect hearing, who married a man with perfect hearing, and became the mother of two deaf-mute daughters and a hearing son; this son married a woman with perfect hearing, and by her had a deaf-mute son; one of the daughters married a deaf-mute and bore a son whose hearing was perfect. There are some diseases of hereditary nature that lie dormant for two or three generations and then develop, such as insanity and consumption. Darwin uses reversion as nearly synonymous with A., to denote not merely the recurrences of long lapsed physical traits, but even the returning to a remote variety of species. Domestic animals running wild will gradually lose their civilized development and become like wild animals of their species. All the wild horses in America are from stock imported from the old world, yet they are nearly of one color, size, and form. Darwin, looking further back, suggests that the occasional appearance of a striped horse or mule indicates descent from some equine genus long ago extinct.

ATAXY LOCOMOTOR, a nervous disease showing itself in disordered movements of the limbs of locomotion. It is not paralysis, but loss of power to order harmoniously the muscles that move the body and maintain equilibrium. It begins insidiously and grows slowly. The earlier symptoms are disorder of vision, uneasiness in the back, with shooting pains through the limbs; increasing or perverted sensibility, and disturbance in the genito-urinary functions. Later, the victim feels that his walking is not firm and sure; that there is some soft substance between his feet and the ground; he walks with difficulty, and with short and hurried steps; each leg is lifted well up, but as he moves it forward, it is thrown out from him and the heel descends with force while the sole comes awkwardly after it. He now requires the aid of vision to walk at all, and looks steadily at his feet or at a point a little in front of them, and he cannot make a sudden turn without great risk of falling. If he stand erect with his feet together or nearly so, and take his eyes off them, he begins to totter and would fall if not supported. These phenomena are not the result of weakness of motor power, but only of defective muscular co-ordination. Diminished sensibility in the feet and legs is usual in this disease. The upper limbs are sometimes affected, so that though the hands retain all their natural muscular power, the sufferer cannot unfasten a button, or pick up a pin, or feed himself. At later stages the disease renders walking impossible, the legs moving loosely about, and the control of the sight upon the feet ceasing. Then the patient takes to his bed, the pains and jerking of the limbs increase, the motor power is quite gone, and he sinks under complete exhaustion or some intercurrent disease. Although usually going to a fatal termination, the disease is sometimes arrested, and appears to be quite conquered, particularly in its earlier stages. In most cases it extends over several years. A. L. arises from disease of a portion of the spinal cord, viz.: the posterior columns and the posterior nerve roots, which become atrophied and indurated. The exciting causes are not well understood, but exposure to cold, over exertion, privation, intemperance, and mental anxiety have been suggested as probable. It is sometimes hereditary, and is more common among males than females. It is developed usually not till middle life, from the age of 30 to 50. Beyond alleviation of pain little can be done by medicine, though many remedies have been tried. Electricity has been recommended by eminent authorities. Perhaps the best course is to attend carefully to the general health and regimen.

ATBARA, or BARR-EL-ASWAD. See NILE, *ante*.

ATCHAFALAY'A BAYOU, an outlet of Red river in Louisiana, connecting also with the Mississippi and flowing southward to the gulf of Mexico. It is about 225 m. long, and navigable for steamers.

ATCHISON, a co. in n.e. Kansas on the Missouri border; 424 sq.m.; pop. '78, 20,600. Agriculture is the main occupation. The central branch of the Union Pacific railroad intersects. Co. seat, Atchison.

ATCHISON, a co. in n.w. Missouri between the Missouri and Nodaway rivers; crossed by the Kansas City, St. Joseph and Council Bluffs railroad; 675 sq.m.; pop. '70, 8440. Agriculture is the only business. Co. seat, Rockford.

ATCHISON, a city of Kansas, seat of justice of Atchison co., on the Missouri, 25 m. from Leavenworth; pop. '75, 12,146. It is one of the great railroad centers of the country, being the terminus of the Missouri Pacific, of a branch of the Chicago, Rock Island and Pacific, of the Atchison and Nebraska, of the central branch of the Union Pacific, and of the Atchison., Topeka and Santa Fe. It is a rapidly growing city, with a great variety of manufactures.

ATCHISON, DAVID R., b. Ky., 1807. He was in the Missouri legislature in 1834, and a county judge in 1841, but was immediately chosen to the U. S. senate, where he at first opposed, and finally advocated, the right to hold slaves in the territories. He advocated the repeal of the Missouri compromise, and became the especial champion of those who were determined to force slavery into Kansas. Defeated in this purpose, A. retired to private life.

ATHABAS'CAS, Indians of British North America along the Arctic ocean and from Hudson's bay westward to the Pacific. There are several tribes, of whom the best known are the Unpquas, the Tinnes, the Dog Ribs, and the Beavers. It is thought that there are from 30,000 to 32,000 of them. They are peaceable and to some extent industrious. There are other A. Indians on the Mexican border from Texas to California, among them the savage and warlike Apaches, and their opposites, the quiet Navajoes and the Lipans. These tribes are about 17,000 in all. They say that their ancestors came from the west over seas and islands of snow and ice; possibly a glimmering of a Tartar origin. They are larger and have more beard than other Indians.

ATHA-BEN-IAKEM, or **ALIAKEM-IBN-ATTA**. See **MOHAMMEDAN SECTS**, *ante*.

ATHE'NA. See **MINERVA**, *ante*.

ATHENODO'RUS, surnamed **CANANITES**, or **SANPONUS**, a Stoic philosopher, who probably gave instruction to Augustus when he was at Apollonia, and who was made tutor to Tiberius, who esteemed him highly for virtue and probity. He was in the habit of giving his opinions freely, and often warned Augustus that when he found himself giving way to anger he should repeat the letters of the alphabet. He d. in Targus, his native t., aged 82. None of his works have survived. Another A., surnamed **CORDILION**, was librarian at Pergamus, and d. in Rome. There were also two sculptors of the name, one of whom assisted Agesander in the group of the "Laocoön."

ATHENS, a co. in s.e. Ohio, on the Ohio river; intersected by Hocking river, and the Marietta and Cincinnati, and the Columbus and Hocking Valley railroads; 420 sq.m.; pop. '70, 23,768. It is well wooded and fertile, and has coal and iron. Large quantities of salt are manufactured. Co. seat, Athens.

ATHERTON, CHARLES GORDON, 1804-53; b. N. H., senator of the United States from New Hampshire. He was a member of the lower house of congress, where, Dec. 11, 1838, he introduced what gave him the cognomen of "gag-rule Atherton." It was a resolution to lay on the table, without reading or reference, any petition touching the subject of slavery. A.'s resolution passed by 120 votes to 78, and for several years all such petitions were treated with entire silence. A. was chosen to the senate in 1843, and again in 1852.

ATHI'AS, JOSEPH, a printer of Amsterdam, who printed two editions of the Old Testament in Hebrew, remarkably accurate, and the first edition in which the verses were numbered in figures. For this and other meritorious works, the states-general gave him a gold medal.

ATHOL, a t. and village in Worcester co., Mass., on Miller's river and the Vermont and Massachusetts railroad, at its junction with the Springfield, Athol and North-eastern, 48 m. n.n.e. of Springfield; pop. of township, 4134. There are manufactories of iron, woolen goods, boots and shoes, etc.

ATITLAN', or **ATITAN**, a lake in Guatemala, 20 m. long, 8 to 10 m. wide, apparently in the crater of a volcano, and so deep that bottom has not been found with a line of 600 yards. It receives some small streams, but has no known outlet. Near it is an Indian town of the same name, with about 2000 inhabitants.

ATLAN'TA (*anie*), a city in Fulton co., Ga., called the "Gate city." After the war, A. speedily recovered from almost complete ruin, and within two years had as great a population as when the rebellion began. It was made the capital of the state in 1868, and since then it has grown rapidly, having in 1879 about 30,000 inhabitants. Among its manufactories is an immense iron-rolling mill, employing many hundreds of men. It is a port of entry, and has a custom-house. Among the public institutions are the

Ogilthorpe university, the North Georgia female college, the A. medical college, and the A. university for colored students. It is one of the most important railway centers in the south, having direct lines to all sections of the union.

ATLANTIC, a co. in s.e. New Jersey, on the Atlantic ocean; 620 sq.m.; pop. '70, 14,093. It is for the most part flat, and marshy near the water, but with dry and light soil inland. The Camden and Atlantic railroad from Philadelphia to Atlantic City runs centrally through the county. Co. seat, May's Landing.

ATLANTIC CITY, a watering-place on the sea-coast, on a long, narrow, sandy island, known as Absecon beach, in Atlantic co., N. J., 60 m. s.e. of Philadelphia; pop. '70, 10,43. It is the terminus of the Camden and Atlantic, and the Philadelphia and Atlantic City railroads. The beach, or island, is 10 m. long by less than a mile wide, and is separated from the mainland by a narrow channel. Absecon light is on the n. end of the beach. The city is well laid out, with broad avenues named after the principal oceans, and cross streets bearing the names of the states of the union. There are many hotels, boarding-houses, and private cottages for the accommodation of summer visitors. There are several churches and one newspaper. The city incorporation dates from 1854.

ATLANTIC TELEGRAPH, HISTORY OF (*ante*). The first experiment in submarine telegraphy was made in 1839 by Dr. W. O'Shaughnessy at Calcutta. Having laid across the river Hoogly a copper wire, insulated with a covering of cotton thread saturated with pitch and tar, he was able to transmit signals through it. His experiment was followed in 1847 by that of J. J. Craven, who insulated an iron wire with gutta-percha and placed it in the circuit of the New York and Washington telegraph line, submerging it in the waters of a small creek. This led, in 1848, to the laying of a gutta-percha cable between New York and Jersey City. An experimental line laid across the English channel in 1850 was followed in 1851 by the permanent cable which is still in use. The success of this undertaking revived the project of a telegraph by way of Newfoundland for rapid communication with Europe. The plan was to carry the line across that island to St. John's, the farthest point on the American coast, and there connect with a line of fast steamers, which it was thought could reach the nearest point in Ireland in five days. Thus America could be brought easily within a week of Europe. In 1854, the attention of Mr. Cyrus W. Field, of New York, was directed to the subject, and while he was considering this proposal, and turning over the globe in his library, the thought flashed upon him, "why not carry the line across the ocean?"

But in a work of such magnitude, it was easier to conceive than to execute. To build the line across Newfoundland was no small undertaking. It was a distance of 400 m., through a wilderness, over land that was wild and waste, marsh and moor, or rocks and hills, and often through dense forests, where every step of the way had to be cleared by the woodman's axe. This overland work took nearly three years. Then to connect the island with the mainland, a cable had to be laid across the gulf of St. Lawrence. One was sent out from England in 1855, but the first attempt to lay it was a failure. The next year a second attempt was made with success. The work thus completed, though costly, was merely preliminary to the more serious undertaking which now began. The practicability of a transatlantic telegraph was doubted by many of the first authorities, both in England and America. Eminent engineers declared that it was beyond the resources of human skill to span the ocean with a cable over 2000 m. long. Even the great Robert Stephenson shook his head, and anticipated only failure. Electricians added that even if it were laid, the electric current could not be sent that distance. To be sure, there were eminent authorities on the other side. The great Faraday encouraged the American projector. But still both scientific men and practical men were so divided, that it was very difficult to inspire in either country the degree of confidence necessary to success. In face of all these obstacles, Mr. Field went to London, and there succeeded in 1853 in organizing the first Atlantic telegraph company and raising the necessary money to carry out the project, subscribing himself for more than one quarter of the entire capital.

The English and American governments gave their aid in the use of ships. The first attempt was made in 1857, but the cable was paid out only about 300 m. from the Irish coast, when it broke, and the ships returned to England. The attempt was renewed the following year. The cable was then placed on board the *Niagara* of the United States navy and the *Agamemnon* of the British navy, which sailed for the middle of the Atlantic. Before reaching it, the *Agamemnon* came near foundering during a severe gale, which lasted several days. Arrived at last in mid-ocean, the ships spliced their separate portions of the cable, intending to sail in opposite directions, the English ship for Ireland, and the *Niagara* for Newfoundland. But the first attempt met with nothing but disaster. Scarcely were the cables joined before they were parted. The attempt was made several times with the same ill success, and both ships returned to England. Then came the severest trial—for even the directors lost faith. When it was proposed to renew the attempt the vice-president left the room in disgust, and refused to take part in an undertaking so hopeless. But the rest stood by manfully, and resolved to try again. The ships returned to mid-ocean, and to the amazement of the world, this time the experiment proved a success. The cable was successfully laid, and messages were sent from shore

to shore. The first one was "England and America are united by telegraph. Glory to God in the highest, and on earth peace and good-will towards men." The queen and the president of the United States exchanged congratulations. The American people were in a frenzy of enthusiasm, lauding the ocean telegraph as the greatest achievement of modern times, and giving unbounded praise to its heroic projector, the president of the United States and many distinguished persons on both sides of the Atlantic sending congratulatory messages to Mr. Field. But this enthusiasm was short-lived. For it was hardly three weeks before the cable began to mutter fitfully, and at last lay silent in the depths of the sea. Then ensued one of those revulsions of feeling so common in the history of all great enterprises, where at first success alternates with defeat. The public became almost ashamed of its late enthusiasm. Many doubted whether there had ever been a message across the ocean, and the whole subject became one for incredulity and ridicule. Three years after, the rebellion commenced, and it was difficult to get people in the United States to listen to commercial enterprises during the excitement of that great contest. But Mr. Field was not idle; he was constantly crossing and recrossing the Atlantic, and addressing chambers of commerce and public meetings in England and the United States, the results being that in 1864, the necessary capital was raised to renew the enterprise. A new cable was constructed, with all the improvements suggested by years of experience in submarine telegraphy, and coiled on board the *Great Eastern*, which was placed under the command of captain, now Sir James, Anderson. She sailed in 1865 with every prospect of success, paying out steadily about 150 m. a day. All went well till over 1200 m. had been laid, when in a sudden lurch of the great ship the cable was broken, and all were again in despair. For some days the gallant crew made attempts to pick it up from the bottom, but the sea was 2 m. deep, and with the resources at hand it was impossible, and the great ship took her way back to England. The attempt was abandoned for that year. But in the summer of 1866 it was renewed, and this time with complete success. The cable was laid from shore to shore, and the communication was perfect. As soon as this was completed the *Great Eastern* returned to mid-ocean, and began fishing for the cable lost the year before, and after weeks of effort succeeded in lifting it to the surface and joining it to 600 m. of cable reserved for the purpose, carried it safely to land. Thus two cables were laid the same year, both without a flaw, and from that time to the present telegraphic communication between the old world and the new has not been interrupted for a single day.

ATLEE, WASHINGTON L., b. 1808; a physician and surgeon of Pennsylvania, graduate of Jefferson medical college, and professor of chemistry there in 1844. He is the author of a great number of medical papers, and is distinguished for success in ovariectomy.

ATMOSPHERIC ENGINE, worked by air-pressure; one was driven by cold air on a small, and hot air on a large piston; one was without heat (see CALORIC ENGINE). The A. E. is now worked with compressed air only. Trains on a city railway have been run with an A. E., using air compressed into a strong cylinder and applied like steam in a steam-engine. Condensed steam is used in a similar way, so as to dispense with fire on the streets; in either case the power is taken at a fixed station. An A. E. was used in the mont Cenis tunnel, where the hydraulic power of a cataract near the entrance was used to compress air in reservoirs, whence it was carried in flexible pipes to the rock-drills. The same method was used in working the Hoosac tunnel, in Massachusetts, and is now commonly applied for railway and mining works. The mechanism and operation of the A. E. are almost identical with those of the high-pressure steam-engine.

ATMOSPHERIC INFLUENCE, the power of the air over inorganic bodies to affect them chemically, varying in degree with the constituents and condition of the air itself. Normally, 1000 parts of the air contain 208 parts of oxygen and 792 of nitrogen; but many other gases are taken up, so that the air varies widely at places not far apart. Electricity, humidity, and temperature are other disturbing agents. The effect of A. I. is shown on buildings, many fine structures having been speedily ruined by it. Granite, in its order of purity, best withstands it among building stones. Egyptian porphyry is also remarkably enduring. Basalt is disintegrated unequally, according to the amount of feldspar therein. The atmosphere of large towns usually contains an excess of carbonic acid gas, and is hurtful to turpentine in timber or other material. Slate is durable in proportion to its density. Sandstone, millstone grit, or conglomerates are affected through the decomposition of the material cementing their particles, or by the mechanical effect of moisture, as by freezing. Limestone decays with varying degrees of rapidity. A. I. on bricks, tiles, etc., depends on the chemical composition of their material and the amount of baking or burning in their manufacture. If bricks contain lime, they will crack and crumble under moisture. In making cements, the A. I. is carefully studied and guarded against by a proper selection of materials. All timbers are affected easily. If moist and exposed to currents of air, evaporation is rapid and cracks are produced by shrinkage. Dry-rot comes from exposure to high temperature, and consequent imprisonment of natural moisture. Common wet rot is well known to come from air and water combined. The influences of both are greatly lessened by covering the wood with oil paint. Kyanizing, creosoting, and pickling in mineral salts are methods

of protecting wood. On metals A. I. is complicated by electro-chemical changes. Iron becomes rusty, that is, the surface is converted into hydrous oxide and will scale off. The more iron is used the less the rusting, as may be seen on comparing a well-worn railway track with a little used siding. Zinc when exposed to air and moisture is rapidly covered with white oxide of zinc, a coating which arrests further oxidation. For this reason, also, galvanizing or plating with zinc is a means of protecting iron. Copper strongly resists A. I.; like zinc, it is soon covered with an oxide that serves as a protection. Lead changes but little in air or water. Glass which is deficient in silica is exposed to decay by the decomposition of its potash and soda. The A. I. causes decay of paintings, statuary, and other works of art, and the destruction of books and manuscripts.

ATOLL', the name given by the Malays to a coral reef which forms an annular island, inclosing a lake of water which is connected with the sea by an open strait. Some A. are nearly 100 m. in circumference, and have from 15 to 60 fathoms of water. They make excellent harbors, with safe entrances, always on the windward side. Some of the reefs sustain considerable vegetation, and are inhabited.

ATOMIC WEIGHTS (*ante*). For additional elementary substances, see CHEMISTRY.

ATOOF', ATAUI, or TAUAI, one of the Sandwich islands, 22° 8' n., and 159° 20' w.; about 40 m. long; 240 m. n.n.w. of Hawaii; pop. 4961. It is rugged and broken, with peaks rising 7000 ft., on one of which was a station for observing the transit of Venus in 1874. The ports are Waimea and Hanaloï.

ATREBATES, or ATREBATII, a people of Belgian Gaul, whose name survives in Artois. In a confederation against Julius Cæsar they furnished 15,000 troops. There was once a colony of them in Britain, in Berks and Wilts.

ATREUS, in Greek legend, son of Pelops and Hippodamia, grandson of Thyestes and Nicippe, whose fortunes and misfortunes, with those of his family, were the favorite themes of Grecian writers and artists. A. married Cleola, by whom he was the father of Pleisthenes; his next wife was Aërope, widow of his son Pleisthenes, and by her he had Agamemnon and Menelaus; his last wife was Pelopia, daughter of his brother Thyestes. The main story of A. begins in blood, he and Thyestes being induced by their mother to kill their step-brother Chrysippus, the son of Pelops and the nymph Axioche. After the murder, the perpetrators fled to Mycenæ, where the king, Sthenelus, was their brother-in-law. The son and successor of Sthenelus lost his life in war with the Heracleids, and Atreus succeeded him as king of Mycenæ. Calamity and crime followed rapidly. Thyestes seduced A.'s wife Aërope, and stole the golden fleeced ram which was the gift of Hermes. A. expelled Thyestes, who sent A.'s own son to kill him, but the father slew the son without recognizing him. Then A. prepared a great revenge. Professing to be reconciled to Thyestes, he invited him to Mycenæ, killed Tantalus and Platenes (the two sons of Thyestes), and served them for a banquet to their father. In the midst of the meal, A. had the skeletons of the dish brought in to edify Thyestes, who, struck with horror, cursed the house of A. and fled, while the sun turned its face from the scene. The kingdom of A. was next stricken with famine, which the oracle said could be remedied only by recalling Thyestes. A. went in search of him, and, at the court of king Thesprotus, married a third wife, Pelopia, who was the daughter of his brother Thyestes, though A. supposed her to be the daughter of Thesprotus. When married, Pelopia was with child by her own father, and this child she exposed to die, but he was brought up by shepherds, and known as Ægisthus, and when A. heard of him he brought him up as his own son. Æschylus says that A. sent Agamemnon and Menelaus in search of Thyestes, whom they brought back to Mycenæ; that A. imprisoned him and sent Ægisthus to kill him; that Ægisthus, having been recognized by his real father, returned with the story that he had done the deed, and immediately slew A., who was offering sacrifice on the sea-shore.—It is believed that the tomb and the treasury of Atreus in Mycenæ have been discovered by Dr. Schliemann, the explorer of the ruined city.

ATROPOS, one of the *Moirai*, or Fates—she who severs the thread of man's life. She is represented with a cutting instrument, or a pair of scales, or a sun-dial.

ATTACHMENT (*ante*), in American usage applied generally to a writ for taking possession of person or property. In regard to persons, A. is issued for contempt of court or of its proceedings, and is in the nature of a criminal process. Concerning property, A. issues to seize effects, credits, or rights, to secure the demands of a plaintiff. In New England a summons has the force of A.; but in most of the states the writ is issued only upon cause shown, and must be antedated by a bond from the defendant to make good any damages that may come from the act. In general, remedy by A. is allowed to a creditor only. Corporations and legal representatives may be reached by A. An A. does not affect the status of the property seized, and neither impairs nor enhances the owners' rights; it is only a lien on the property, and valueless if the claim be unfounded. Usually the officer making an A. is held responsible for the things seized until final adjudication. In some states the owner may keep possession of the property by giving a bond with sureties to deliver as the court may direct; in some, the A. may be dissolved on giving a bond to secure the plaintiff and what he may recover. Judgment

for the defendant dissolves an A.; in some states it is dissolved by the death of the defendant, or of a corporation. Suits may be brought for malicious A., and the proceedings will be governed by the law applicable to malicious prosecution.

ATTAINDER (*ante*) is unknown in the United States, the 9th section of the 1st article of the federal constitution declaring: "No bill of attainder or ex-post facto law shall be passed."

ATTAKAPAS, an unofficial designation for a large and fertile section in the southwestern part of Louisiana, remarkable for the production of sugar and molasses. The ATTAKAPAS INDIANS were a tribe in Louisiana called by the Choctaws "Men Eaters." The tribe became extinct many years ago.

ATTALA, a co. in central Mississippi, on Big Black river; 750 sq.m.; pop. '70, 14,776—5948 colored. It produces cotton, corn, sweet potatoes, and some wheat. The Chicago, St. Louis, and New Orleans railroad touches the w. border. Co. seat, Kosciusko.

ATTALUS, uncle of Cleopatra, the wife of Philip of Macedon. He was a general under Philip, and had much influence over him. At the marriage of his niece he asked the company to beg of the gods a legitimate heir to the throne, an insinuation against Alexander, who was present and who resented it. In the fight which ensued, Philip drew his sword against Alexander, who, with his mother, soon afterwards withdrew from the kingdom. Philip lost his life because of his partiality for A., for when A. had outraged Pausanias, a young man of noble family, and Pausanias had asked redress from the king without getting it, the incensed youth assassinated Philip himself. Thereafter A. played a double part with Alexander and Demosthenes, and was finally assassinated by Alexander's orders.

ATTALUS I., 290-197 B.C., King of Pergamus. He defeated the Gauls who had occupied Galatia, and was an ally of Rome in a war against Philip of Macedon.

ATTALUS II., surnamed PHILADELPHUS, 200-138 B.C.; king of Pergamus. Before coming to the throne he gained distinction as a brave and able military leader, and was on several occasions sent as ambassador to Rome. He succeeded his brother Eumenes, 159 B.C. His reign was full of wars, in which his fortune was generally good. He founded Philadelphia in Lydia, and Attila in Pamphylia, and was a generous patron of the arts.

ATTALUS III., called also PHILOMETOR, son of Eumenes II. and Stratonice; succeeded his uncle A. Philadelphus as king of Pergamus, 138 B.C. He is unfavorably known for conduct so extravagant as to seem the effect of insanity, and for the murder of friends and relatives. Being overcome with remorse, he suddenly abandoned public business, and spent his time in gardening and in sculpture. He was sunstruck while supervising the erection of a monument to his mother, and died of fever, 133 B.C. His will made the Roman people his heir.

ATTALUS, FLAVIUS PRISCUS, for one year (409-10) emperor of the west, and the first raised to that office solely through barbarian influence, being declared by Alaric and his Gothic army after the second surrender of Rome, when Honorius was deposed. The barbarians set A. up at Ravenna, whence he sent a message to Honorius commanding him to leave the throne, retire to a desert island, and cut off his feet. But Alaric soon wearied of him, and he was deposed. After Alaric's death, A. remained with Ataulphus, where he celebrated as a musician the nuptials of Placidia. Ataulphus put A. forward again as a rival emperor during the insurrection of Jovinus, but he was taken prisoner and brought to Honorius, who inflicted on him a part of the sentence he had written for the Roman emperor; he cut off his thumb and forefinger, and banished him to the island of Lipari.

ATTAMAN, or HETMAN, the title of the leading chief of the Cossacks of the Don. Formerly the A. was elected by the people, the mode being for each man to throw his fur cap at his candidate, the one having the largest heap of caps being elected. While the Cossacks were under the Poles, the A. was chosen by the Polish king. Under Russia they reserved their A. rights until the insurrection of Mazeppa, after which the office was suppressed. The last elected A. was Platoff, after whom the title became hereditary in the Russian heir-apparent.

ATTENTION, the concentration of consciousness, or direction of mental energy upon a definite object. By means of it we bring within the circle of our conscious life, perceptions and ideas which could not otherwise have risen from their obscurity; or we render clearer and more distinct those already under notice. Its mode of operation, and the effect produced, may be compared with the concentration of visual activity on some definite part of the field of vision, and the clearer perception of the limited portion thereby attained. In both cases the effect is brought about, not by any change in the perceptions themselves, but by isolating them and considering them to the exclusion of all other objects. Since all consciousness involves discrimination, that is, the isolation of one object from others, it involves A., which must therefore be defined as the necessary condition of consciousness. As the concentration of consciousness upon any one attribute of an object involves the withdrawal of consciousness from all other attributes,

the withdrawal is, etymologically and logically, abstraction, which is thus the negative side of attention, the two processes forming the positive and negative poles of the same mental act.

ATTERBOM, PETER DANIEL AMADEUS, 1790-1855; a poet of Sweden. He was a leader among the students in the university of Upsal, who formed the association known as the "Aurora," designed to release Swedish literature from slavery to French models and taste. He traveled in Germany and Italy, and became German tutor to prince Oscar; he was afterwards professor at Upsal, and still later a member of the academy which he had so violently assailed. He was the founder and editor of the *Poetical Calendar*, which had much influence on the æsthetic culture of the people. Besides many poems, he was the author of a valuable review of Swedish literature.

ATTIC (pertaining to Attica), characteristic of the people of Athens, or Attica; as "A. dialect" which came to be the best form of Greek, and that in which most of the great works of antiquity were written. There was an old and a new A. dialect; the former represented in Sophocles, Euripides, etc., and the latter in Demosthenes, and contemporary orators. Sophocles was called "the A. bee," from the sweetness of his compositions; the nightingale was the "A. bird," because Philomel was the daughter of a king of Athens; Xenophon the "A. muse," for eloquence in composition; "A. salt," indicates pungency of wit.

ATTICUS HERODES, TIBERIUS CLAUDIUS, b. about 104 A.D., a rich Athenian. To a vast sum of money left him by his father, he added much more by marriage. He was educated by the best masters, devoting special attention to oratory, in which he greatly excelled. He was also a noted teacher of rhetoric, having for pupils Marcus Aurelius and Lucius Verus. From Aurelius he received the archonship of Athens and the consulate of Rome. His fame rests mainly upon immense expenditures for public purposes. In Athens he built a race-course of Pentelic marble, and a splendid theater. In Corinth he built a theater; in Delphi, a stadium; at Thermopyke, hot-baths; at Canusium, in Italy, an aqueduct. He contemplated a canal across the isthmus of Corinth, but gave it up because Nero had tried and failed. He restored several of the partially ruined cities of Greece, where inscriptions testified the public gratitude to him. For some reasons the Athenians became his enemies, and he left the city for his villa near Marathon, where he d. 180 A.D. Nothing of his writing is known to exist.

ATTLEBOROUGH, a t. in Bristol co., Mass., 31 m. s.s.e. of Boston, on the Boston and Providence railroad; pop. of township, '80, 11,109. Its chief manufactures are clocks, jewelry, buttons, and printed calicoes. Mill river furnishes ample water-power.

ATTORNEY (*ante*), one put in another's place to manage his affairs. An *A. in fact* is one formally appointed, and any person of sufficient age and understanding can be chosen. An *A. at law* is an officer of the court employed by a client to manage his cause; his business being to carry on the formal and practical work of the suit, to be true to the court, and faithful to his client; if called as a witness he may refuse to disclose matters in confidence between himself and his client. An *A.* may be disbarred for certain offenses.

ATTORNEY-GENERAL (*ante*), in the United States, an officer of the cabinet, charged with the conduct of the legal business of the government. There is an *A. G.*, or some officer having similar powers and duties, in each state.

ATTORNEY, POWER OF, an instrument authorizing a person to act as the agent or attorney of the person granting it. A general power authorizes the agent to act generally for the principal. A special power limits the agency to particular things. A power of attorney may be by parole, or under seal. The attorney cannot execute a sealed instrument that will bind his principal unless his own power is given under seal. Grants of this nature are very strictly construed. Authority given to one person cannot be delegated by him to another, unless expressly set forth in the original grant. The death of the principal at once cancels a power of attorney. All conditions in the power must be strictly observed to render the attorney's action legal.

ATTUCKS, CRISPUS, an Indian mulatto, of Framingham, Mass., killed Mar. 5, 1770, in the "Boston massacre." There had been several collisions between the people and the soldiers, in one of which A. headed a party in King street, now State street. He seized the bayonet of a soldier and knocked him down; a volley was fired, and A. was the first to fall. There was a great funeral in Faneuil hall, and the incident was for some time annually commemorated, serving well the purposes of the approaching revolution.

ATWATER, LYMAN HOTCHKISS, D.D., b. Conn., 1813; a graduate of Yale, and tutor and theological student there. He has been pastor of a Congregational church in Fairfield, Conn., and professor of mental and moral philosophy, and of logic and moral and political science in the college of New Jersey. In 1869, he became editor of the *Princeton Review*. He is the author of a *Manual of Logic*, and a frequent writer for periodicals.

ATYS, ATTIS, or ATTES, a beautiful shepherd of Phrygia, son of Nana. Cybele loved him, and made him her priest, on condition that he should preserve entire chastity; but he transgressed with the daughter of a river god, for which offense Cybele

made him insane, in which condition he deprived himself of further temptation to unchastity. He was about to kill himself when Cybele changed him into a fir-tree, which she made sacred to herself, and decreed that all her priests thereafter should be eunuchs. Like many other myths, this one is supposed to represent the successive death and regeneration of nature by the changes of the seasons. In art, A. is represented as a shepherd with crook and flute. He was worshiped with the goddess in Cybele's temples.

AUBERT DU BAYET, JEAN BAPTISTE ANNIBAL, 1759-97; a French general who served with Rochambeau in the American revolution. He was in the French assembly in 1791; commanded at the siege of Metz in 1793; was minister of war in 1795, and minister to Constantinople, where he d., in 1797.

AUBERVILLIERS, a village of France, near Paris; pop. 11,694. There was once a picture of the Virgin in the village church which was thought to possess miraculous powers, and the church was known as Notre Dame des Virtus. A fort built in 1842 stands east of A.

AUBIN, a t. 16 m. n.e. from Villefranche, department of Aveyron, France; pop. '66, 8863. It is in the midst of a coal region of great productiveness.

AUBREY, JOHN, 1625-97; an English antiquary. He was a diligent collector of old documents, and left some valuable works of his own. He wrote *Natural History and Antiquities of Sussex*, and *Letters written by Eminent Persons of the Seventeenth and Eighteenth Centuries*, giving in the latter work much biographical matter concerning English poets.

AUBURN, a village and seat of justice of Androscoggin co., Me., on the Androscoggin and little Androscoggin rivers and the Maine Central railroad, 34 m. from Portland; noted for cotton and shoe manufactures. Pop. '76, 6169.

AUCHMUTY, ROBERT, a lawyer of Scotch descent, b. in England, but a settler in Massachusetts in early life. He was judge in admiralty in 1733, and in 1741 went to England as colonial agent, where he published a pamphlet on the importance of cape Breton to England, with suggestions for its capture. He died in Boston, April, 1750.

AUCHMUTY, ROBERT, son of Robert the lawyer, also a lawyer in Massachusetts, and admiralty judge in 1767. He was associated with John Adams in the defense of capt. Preston, who was one of the British officers in the "Boston massacre." A. was a strong royalist, and went to England, where he d., 1788. Some of his letters to people in England, which were sent to the colonies by Franklin, created much excitement.

AUCHMUTY, SAMUEL, D.D., 1722-77; son of the first Robert. He graduated at Harvard, and took priest's orders in England. The society for the propagation of the gospel sent him to New York as assistant minister of Trinity parish, and in 1764 he had charge of all the Episcopal churches in the city. When the American revolutionists took possession of the city, he was forbidden to read prayers for the king, but he continued until troops invaded the church and threatened force. He locked the church and chapels, and fled to New Jersey with the keys, ordering that no church should be opened until the forms of prayer could be read without abridgment. A few months later the British took the city, and A. worked his way through the American lines, with great difficulty, just after his church and all its records had been destroyed by fire. He preached only one more sermon, in St. Paul's, was taken ill from exposure and hardship, and died a few days later.

AUCHMUTY, Sir SAMUEL, 1758-1822; son of Rev. Samuel. He was a graduate of King's (Columbia) college, and went into the English service in 1776; was in the battles of Brooklyn and White Plains, and served in three campaigns. Having risen to a captaincy, he served in India from 1783 to 1796, participating in the siege of Seringapatam. In Egypt, in 1800, he was Abercrombie's adjutant-general; and a brigadier-general in South America, where, in Feb., 1807, he took by assault the fort and city of Montevideo, for which parliament voted him thanks. In 1810, he commanded in the Carnatic, and the next year reduced the Java settlements, and was again voted thanks. In 1822, he held the chief command in Ireland.

AUDHUMBLA, in Norse mythology, the cow formed at the creation from frozen vapors resolved into drops. She nourished Ymer, the huge giant made of frost and fire, from whose body the gods made the world.

AUDIPHONE, an instrument to assist the hearing. A thin rectangular sheet of substance resembling ebonite, provided with a handle, and having the semblance of a fan. When used as an A., the sheet is strained into a curve by strings which lead from the outer edge to the base of the handle. The outer edge is then placed against the upper teeth, and the sound-vibrations, gathered at the surface of the A., are communicated to the auditory nerve through the teeth and bones of the head. The A. may be used with artificial teeth, if they are well seated on the upper jaw.

AUDITOR (*ante*). The federal, state, and city governments elect or appoint auditors to supervise accounts. In the United States treasury department there are six, each having charge of a single branch of service. States and cities usually have one or

more. An A. may be appointed by a court to state items and balances of accounts which are in question; he has authority to hear testimony, and in some states his reports are final as to questions of fact. Churches, benevolent, and other societies, usually have A.'s for inspection of financial accounts.

AUDLEY, THOMAS, lord Audley of Waldon, 1488-1544; an English lord chancellor. He was chosen speaker of the commons in the Long parliament in 1529; in 1532, he was made a knight and successor of Sir Thomas More as keeper of the great seal. In 1533, Henry VIII. made him lord chancellor, in which capacity he presided at the trial of More and others. When the confiscated church lands were parceled out, A. got Christ church in London with all its real estate, together with the great abbey of Walden, in Essex, which he made into a residence for himself. He gave lands to the support of what was then Buckingham college, Oxford, which was incorporated after the gift under the name of St. Mary Magdalen's college.

AUDOUIN, JEAN VICTOR, 1797-1841; an entomologist, native of Paris. With Damas and Brongniart, in 1824, he began the *Annals of Natural Science*. He was professor of entomology in the museum, and a physician, in 1826. He was the founder and first president of the entomological society, and in 1838 a member of the academy. He investigated, at the request of the government, the injuries done to vine and silk culture by insects, and contributed a great number of reports and papers on his favorite subject, and, with others, wrote a work on the insects injurious to vineyards, etc.

AUDRAIN', a co. in n.e. Missouri, intersected by the St. Louis, Kansas City and Northern, and a branch of the Chicago and Alton railroads; 375 sq.m.; pop. '80, 19,835. It is a grazing and agricultural region, generally level and fertile. Beds of coal have been found. Co. seat, Mexico.

AUDUBON, a co. in s.w. Iowa; 630 sq.m.; pop. '75, 2370. Agriculture is the leading interest. Co. seat, Exira.

AUENBRUG'GER, or AVENBRUG'GER, VON AU'ENBRÜG, LEOPOLD, 1722-1809; an Austrian physician who discovered the mode of investigating diseases of the chest and abdomen by auscultation. He applied his ear to the chest, and noted the sounds that followed a smart blow of his hand on the patient. His treatise on the subject attracted little attention until it was translated and illustrated by Corvisart, in 1808, when it quickly led the way to Laennec's improvement, whereby the ear is aided by the stethoscope. The great value of A.'s discovery has long been universally admitted.

AUERBACH, HEINRICH (real name STROMER), 1482-1542; a Bavarian physician and friend of Luther. He erected a large building in Leipsic in 1530 which is still known as the Auerbachshof, in which is a cellar where the great reformer drank, and out of which, as the people believed, Faust, the magician, rode upon a barrel, an event kept in memory by a painting on the wall of the cellar.

AUERSPERG, ADOLPH WILHELM DANIEL, Prince, b. 1821; son of prince Wilhelm Auersperg; served as a major of dragoons; in 1867, a member of the Bohemian diet, and president of the assembly; in 1869, member of the upper chamber of the Austrian Reichstag; in 1871, succeeded Benet as the head of the Austrian ministry. He was in the same office in 1879.

AUERSPERG, ANTON ALEXANDER, Count von, 1806-76; an Austrian statesman and poet, more widely known by the *nom de plume* "Anastasius Grün." He belonged to an old Suabian family which obtained large estates in Carniola. After studying law and philosophy in Vienna and Gratz he traveled over Europe and England, and in 1839 married the countess Maria von Attems. He was offered official position but refused, as he was a prominent liberal and a strong opponent of Metternich and his policy. He wrote verses while a student, and in 1839 published a small volume, and also a semi-political romance. The next year his political reviews appeared and made a great sensation, exciting the government to detect the writer, who was fined 50 ducats. In 1835, he issued another collection of patriotic verses, and in 1837 collected his earlier writings into one volume, of which nearly 20 editions have been published. In 1848, he was chosen to the German "Vorparliament," and soon afterwards to the Frankfort national assembly, where he was on the "left center." He left in disgust before the year ended, in consequence of the murders of Auerswald and Lychnowski. In 1859, he returned to public life, but in 1861 was made a life-member of the Austrian Herrenhaus, where he was the author of addresses to the throne. In the diet of Carniola and Styria he was a liberal and the supporter of German ideas. In 1868, he was elected president of the delegates of the Austrian crown lands, but, except the seat in the Herrenhaus, he resigned all official positions. Some of his speeches, especially those in the confessional debates of 1868 and 1874, have attained great popularity. *Robin Hood* (in German) was his last poetical work of consequence.

AUERSPERG, CARLOS, Prince, b. 1814; an Austrian statesman, member of one of the oldest families of the empire. On the re-establishment of constitutional government, in 1861, he was made president of the upper chamber of the Reichsrath; and as representative of the Bohemian landed nobility in the diet of Prague, he has taken a conspicuous part in the defense of the constitutional system against clerical and feudal reaction,

and in establishing the unity of the empire against federation. He was a zealous supporter of the liberal cabinet, at the head of which was his brother Adolph.

AUERSTÄDT, a village in Saxony, 10 m. w. of Naumburg, where Davoust won a great victory over the Prussians under the duke of Brunswick on the day (Oct. 14, 1806) that Napoleon defeated their main army at Jena. Napoleon made Davoust duke of A.

AUGER, FLEXIBLE, an invention which permits great freedom in the direction of a boring tool. Its shaft is a closely coiled, flexible, steel spiral, fitted at one end with a sheave or pulley, and at the other with a suitable jaw for holding a bit. This shaft turns within a flexible tube, lined with spiral wire. Motion is communicated to the pulley by a cord, or belt, from some fixed machinery, and the belt is kept strained by a counter-rope which is tied to some firm support. Augers are used varying from three eighths of an inch to an inch in diameter. The larger requires an inch driving cord.

AUGLAIZE, a co. in w. Ohio, intersected by the Dayton and Michigan and the Lake Erie and Louisville railroads; 339 sq.m.; pop. '80, 25,465. The Miami canal passes through, and it is drained by A. river. Surface level, well wooded, and soil fertile. Co. seat, Wapakoneta.

AUGUR, CHRISTOPHER C., b. 1821; a graduate of West Point and brigadier-general in the U. S. army; served in the war with Mexico, and in various Indian skirmishes. In the civil war he was major-general of volunteers, and was wounded at Cedar mountain. At the close of the war he was brevetted major-general of the regular army.

AUGUR, HEZEKIAH, 1791-1858; an American artist. His best work is the statue of "Jephtha and his Daughter" in the Trumbull gallery of Yale college; but what gave him greater fame was the invention of a machine for carving, which is now in general use.

AUGUSTA, a co. of Virginia, in the valley of the Shenandoah; 900 sq.m.; pop. '70, 28,763-6737 colored; in '80, 35,500-7000 colored. It is watered by the branches of the Shenandoah and their tributaries, and by several small streams flowing into the James river. The elevation is considerable, including as it does the ridge dividing the waters of the Shenandoah from those of the James. The population is largely of Scotch-Irish descent, with an intermixture of the German element from Pennsylvania. The chief productions are beef, pork, mutton, wool, wheat, corn, rye, oats, barley, hay, and tobacco. The streams furnish an abundance of water power. Deposits of iron and magnesia are found in some places. Near Craigsville is an inexhaustible deposit of coral marble of fine quality, and in the eastern section anthracite coal is abundant. Mineral springs abound. The educational advantages of the county are of a superior kind.

AUGUSTA, JOHN, 1500-75; a German theologian. He studied at Würtemberg under Luther and Melancthon, though he did not adopt all of the former's views. He was a minister among the Bohemian brethren, and subsequently the bishop of the sect. After the Schmalkalden war, all the sect were banished, and A. and other leaders arrested. He was offered freedom if he would make public recantation, but this he declined to do. In 1564 he was liberated, pledging himself not to teach or preach. He wrote an *Outline of the Doctrines of the Bohemian Brethren*, and two other religious works.

AUGUSTA, MARIA LOUISA CATHERINE, b. Sept. 30, 1811; queen of Prussia and empress of Germany, daughter of Charles Frederick, the grand duke of Saxe Weimar, by a daughter of Paul I. of Russia. She was brought up at the court of her grandfather, Charles Augustus, where she was intimate with Goethe. Her oldest sister married Charles, prince of Prussia, and she married his brother William, June 11, 1829. Her only children are the crown prince and the princess Louisa, whose education she herself personally superintended. The empress is a lover and patron of arts and letters, and is greatly beloved for benevolence, and for personal exertion for the relief of wounded soldiers in 1870-71, which work she supplemented in 1872 by founding a seminary for the education of the daughters of officers who fell in the war.

AUGUSTA HISTORIA, or AUGUSTAN HISTORY, the title of a collection of biographies of Roman emperors from Adrian to Carinac. The memoirs are important for matters of fact, but the literary character is poor. The first edition was printed as early as 41 as 75, at Milan. There is no English translation.

AUGUSTAN AGE, the literary period of Rome which was at its height in the reign of Augustus, during which such writers as Ovid, Horace, Cicero, Virgil, and Catullus flourished, with patrons of literature like Mæcenæ. At that age the language was in its perfection, and men of letters were held in high honor. The English A. A. was the period of Addison, Swift, Steele, and their compeers. In France such a period is assigned to the latter part of the reign of Louis XIV.

AUGUSTUS FREDERICK, 1773-1843, Prince of Great Britain and Ireland, duke of Sussex, sixth son of George III. At Rome he married Lady Augusta Murray, daughter of the earl of Dunmore, a Roman Catholic; but the marriage was annulled because he had acted without the consent of the crown. She separated from him at once, and their children, a son and a daughter, took the name of D'Este. In 1801, A.

was made a peer, with a grant of £12,000 a year, to which £9000 was subsequently added. He was a liberal on most questions, and favored the abolition of the slave-trade, Roman Catholic and Jewish emancipation, free trade, and the reform bill. In 1810, he was grand master of freemasons; in 1816, president of the society for the encouragement of useful arts; and in 1830, president of the royal society. The prince was a liberal patron of literature and the arts, and possessed an unusually fine library.

AULAF, or ANLAF, d. 980; a pagan king of Northumberland. Athelstan expelled him from Northumbria, whence he fled to Ireland. In 937 he tried to recover his kingdom, but was driven out and went back to Ireland to ravage that country. After Athelstan's death, A. recovered Northumbria by defeating Edmund at Tamworth. Edred, Edmund's successor, compelled A. to embrace the Christian religion; but the Christians themselves drove him out, and he once more went to Ireland, where he defeated and put to death Murdock, king of Leinster, in 957. Other princes fell before him, and he called himself king of Ireland. In 980 he lost his son and heir, and went on a pilgrimage to Iona, where he died.

AULIS, a t. in Boeotia, on the Euripus strait, where the Greek fleet assembled before sailing for Troy. Its temple of Artemis was standing in the time of Pausanias, but the t. contained only a few workers in pottery.

AULNAY DE CHARNISÉ, CHARLES DE MENOÛ, a French land-owner, conspicuous in the history of Acadie, or Nova Scotia. He was agent first for Isaac de Radzilly, proprietor of Acadie, and afterwards for Charles, the brother of Isaac, whose rights he purchased. There was a long contest between A. and La Tour, a rival proprietor, in which both sought aid from New England. A. triumphed, capturing Mme. La Tour, in 1645, after which he was appointed governor. His widow married his rival, La Tour.

AULUS GELLIUS, a Latin author in the time of the Antonines, of whom little is known beyond his *Noctes Atticæ*, a mass of ill-digested but valuable information concerning the men and manners of the age.

AUMALE, a t. in France, 40 m. n.e. of Rouen; pop. '66, 2929. Here, in 1592, in a battle between the Spaniards and French, Henry of Navarre was wounded. A. was a county in the early part of the 15th c., and belonged to Claude Lorraine, son of Rene II. Claude was created duke of Guise, and became the head of that famous house.

AURELLE, or D'AURELLE, DE PALADINES, b. 1803; a French soldier, distinguished in the Crimean war. In the German war he was the commander of the fifth French division at Metz. After Napoleon's fall he organized the army of the Loire, drove Von der Tann from Orleans, and won the first victory for France, for which he received the chief command of the army of the Loire. He was repulsed in an attack upon the army of prince Frederick Charles, and beaten by the grand duke of Mecklenberg at Artemay; the next day prince Frederick drove him back to the forest of Orleans and took possession of the town. A. was soon afterwards removed from his command, and offered that of the camp at Cherbourg, which he refused, and he also refused to succeed gen. Chanzy. In the national assembly he was opposed to continuing the war. At a later period he was commander of the national guards in the department of the Seine, and a member of the Bazaine court-martial.

AURE'OLA, or AU'REOLE, the halo, or "glory," with which old painters encircled the heads and sometimes the entire persons of angels, saints, and martyrs. The circle with a cross was given to the Saviour only; without the cross, to canonize saints. Though supposed to be a Christian invention, it appears that it was used long before Christ in pictures of Hindoo deities.

AU'REUS, or DENA'RUS AUREUS, the oldest standard gold coin of Rome, coined 207 B.C.; average weight, 121 grains.

AURIFABER (Lat. for GOLDSCHMIDT), JOANNES, 1519-79, a Lutheran divine, friend and companion of the reformer. He was educated at Wittenberg, became tutor to count Mansfeldt, and in the war of 1544 was with the army as chaplain. Afterwards he lived with Luther as his secretary, and was present at his death. Half of the next year he was in prison with the elector of Saxony, who had been captured by Charles V. He was for some years court preacher at Weimar, and in 1566 was appointed minister of the Lutheran church at Erfurt, holding the place until his death. He collected many of Luther's manuscripts and letters, and assisted in editing them. He also published *Luther's Table Talk*, in 1566.

AURIGA, or THE WAGONER; a northern constellation in which is Capella, a very brilliant star of the first magnitude.

AURIOL, a t. in France, in the dep. of Bouches-du-Rhône, 16 m. n.e. of Marseilles; pop. '66, 5182. The manufacture of flags is a prominent business, and there are coal-mines near the town.

AUROCHS, the European bison; a wild animal of the *bos* family, once plentiful over northern Europe, but now scarce and probably to be found only in the royal Lithuanian forests, where it is protected. The A. was probably contemporary with the mammoth, and it is thought to be the animal described in Cæsar's works as abundant in the forests of Gaul. There were two species *bos ureus* and *bos primigenius*; and of both fossil re-

mains are found in post-tertiary deposits in Europe and America. It has been suggested that the animal furnished food for prehistoric mankind.

AURORA, a city in Kane co., Ill., on Fox river, and the Chicago and Iowa, and Chicago, Burlington and Quincy railroads, 38 m. s.w. of Chicago; pop. '80, 12,059. The river furnishes abundant water-power for manufacturing purposes. There are railway repair shops here, which employ about 1000 men.

AURORA, a city in Dearborn co., Ind., on the Ohio river, and the Louisville branch of the Ohio and Mississippi railroad; 25 m. below Cincinnati. It has a number of manufactories, but the river trade is the most important business. Pop. '70, 3304.

AU SA'BLE, a t. and village in Clinton co., N. Y., on the A. S. river, 7 m. from lake Champlain; pop. of township, '70, 2863. In the vicinity of the village is a great chasm or gorge, much visited by tourists.

AUSONES, a tribe of unknown origin in ancient Italy, said in tradition to be descended from Auson, a son of Ulysses and Calypso. They gave the name Ausonia to southern Italy, afterwards called Magna Græcia. Niebuhr supposes they were of the Oscan nation.

AUS'SIG, AUSSYENAD, or LABEM, a t. of Bohemia, at the junction of the Elbe and the Bela, 44 m. n.n.w. of Prague; pop. '69, 10,933. In 1426, A. was destroyed by the Hussites, and in 1639 was seized by Sweden. There is a church here which, it is claimed, was begun in 826, containing a "Madonna" by Carlo Dolce. The trade of A. is in coal, fruits, mineral waters, and timber.

AUSTIN, a co. in s.e. Texas, on both sides of the Brazos; traversed by the Houston and Texas Central railroad; 1024 sq.m.; pop. '70, 15,087—6574 colored. Timber and stock-raising are the chief resources. Co. seat, Bellville.

AUSTIN, JONATHAN LORING, 1748—1826. He was b. in Boston, a graduate of Harvard, joined in the revolution, and was secretary of the Massachusetts board of war. In 1777, he was one of the commissioners sent to Paris to announce the capture of Burgoyne. Franklin employed him as an agent in England, and on his return in 1779, he was rewarded by congress. The next year he sailed for Spain as agent of the colonies, but was captured and taken to England, though soon afterwards liberated. He was secretary and treasurer of the new state of Massachusetts.

AUSTIN, MOSES, d. 1821; a Connecticut pioneer in Texas. He took his family to the west in 1798, and from 1800 to 1820 was engaged chiefly in lead-mining. While at Bexar, Texas, he got permission from the Mexican commandant to colonize 300 families, and soon began the work, which was more fully carried out by his son.

AUSTIN, SAMUEL, D.D., 1760—1830; b. Conn.; a Congregational clergyman, who graduated at Yale; studied theology, and was ordained in 1786 as pastor of a church at Fairhaven. In 1790, he took charge of the First church in Worcester, Mass., and in 1815 was chosen president of the university of Vermont, where he remained six years. He returned to Worcester in 1825. In the closing years of his life he was slightly deranged. He published several religious works.

AUSTIN, STEPHEN F., d. Dec., 1836; son of Moses, and head of the Texan colony founded by his father. The colony occupied the site of the present city of Austin. Though much annoyed by Indians, he made it successful, and it received many accessions until the Americans became so numerous that they held a convention in Mar., 1833, to form a government for themselves. Without heeding the Spanish population, they agreed upon a plan, and A. took it to Mexico to receive its ratification, but there were so many revolutions on foot that he did not get a hearing. Then he sent a letter to Texas, recommending the Americans to unite all the settlements and municipalities and organize a state. This cost him three months' imprisonment, and longer surveillance, but in 1835 he returned to Texas and took command of the small revolutionary army. He induced Sam Houston to take the chief command, while A. went as commissioner to the United States, and prepared the popular mind to receive the new republic of the lone star. Before his mission was successful he returned to Texas, where he died.

AUSTIN, WILLIAM (or BILLY); the half-witted boy of Deptford who was reputed to be the son of queen Caroline; though she was legally acquitted of the charge, she kept him near her. In 1830, he was sent to a lunatic asylum in Milan, and came back to England in 1845. After a medical examination, at the request of his guardian, he was ordered to a private asylum in London.

AUSTRIAN LIP, the thick lip so characteristic of the Hapsburgs, derived from Cymbarga, a niece of a king of Poland, who was noted for beauty and unusual strength.

AUTAUGA, a co. in central Alabama, on the A. river; 650 sq.m.; pop. '70, 11,623—7292 colored. The soil is fertile; the surface uneven. There are several cotton and other factories. The Selma, Rome, and Dalton railroad touches the w. part of the county. Co. seat, Prattville.

AUTHENTICS, the Latin translation of Justinian's *Novelle* and a literal conveyance of the original. The term was applied to extracts from the decisions of the "Novellæ" by which previous decisions were set aside or modified. Two German emperors, Fred.

erick I. and II., put forth A. in their own names, and ordered them to be inserted in the Justinian code.

AUTOCHTHONES, according to Greek mythology, the first human pair who appeared in the world, and who, as the name implies, were believed to have sprung from the earth itself. Instead of only one pair for all lands, each district of Greece had its own A., who were supposed to have sprung from rocks, trees, or marshy places; the most peculiar and wide-spread belief being that which traced the origin of mankind to the otherwise unproductive rocks. Was there a shadow of Darwinism in the legend that the A. of Athens, Erysichthon, had legs like a serpent; or did it merely indicate that they were supposed to have come from a bog? The earth-born giants who made war upon the gods also had serpent legs. In Thebes the race of the Sparti were said to have sprung from a field sown with dragon's teeth, and the Phrygian Corybantes to have been forced out of hill-sides, like trees, by Rhea, the great mother. These originals of men in various countries were supposed to have lived like animals, in caves and woods, till by the help of gods and heroes they reached a stage of civilization. A. is applied in a general way to indicate the original inhabitants of a country.

AUTOPLASTY, in surgery, the operation of renewing a portion of the body that has been torn away, by reinforcement from other parts; thus, a nose may be built up by strips cut from the arm or elsewhere. The art appears to be very old, and was practiced in India ages ago. Probably it arose from the desire to conceal the fact of infamous punishment which very often consisted in cutting off the nose or ears. If immediately rejoined the parts would grow together, and to prevent this the portions cut off were destroyed. But it was reasoned that if the parts cut off would grow together, any live flesh would do so. It was possible, therefore, to recruit a nose by a strip from the forehead or elsewhere. Celsus speaks of A. with reference to the nose and lips, and in the 15th c. it was practiced by Calabrian surgeons. In our days various improvements have been made, and now almost any injured part of the body's surface may be restored, often almost perfectly, by this art. There are several methods: one is to loosen the skin near the injured part and turn it down over the wound; another is to take the skin from the fleshy part of the limbs; and a third is to detach the skin for some distance on all sides and gently draw it over the place to be mended. The last method is considered much the best.

AUTUMN, astronomically, the third season of the year; in the northern hemisphere covering the period from the sun's crossing the equinoctial, at the autumnal equinox, Sept. 22, till it is on the tropic of Capricorn, at the winter solstice, Dec. 22. Popularly, the A. in America is the three months of Sept., Oct., and Nov.; and in England Aug., Sept., and October. The American autumn is often considered the most delightful part of the year. S. of the equator the A. extends from the vernal equinox, Mar. 20, to the summer solstice, June 20.

AUXONNE, a t. in France on the Saone, 17 m. s.e. of Dijon; pop. 5911. It is fortified, and has an arsenal and barracks, and manufactories of woolen and nails.

AUZOUT, ADRIEN, d. Rome, about 1693; a French astronomer. He and Picard applied the mural quadrant to the telescope, and A. made and applied a movable wire micrometer, by means of which he measured the daily variations in the moon's diameter, which Kepler had explained. A. was also an optician and a manufacturer of telescopes. He was one of the original members of the academy of science, founded in 1666.

AUZOUX, THÉODORE LOUIS, b. France, 1797; an anatomist and physician. He was known as the inventor of the method of making permanent models of anatomical preparations in *papier machie*, the special advantages of which are: lightness and strength of material; enlargement of minute parts; colors after nature; and the ease with which models may be dissected and put together in the smallest particulars. In 1825, he completed his invention and established a manufactory at St. Aubin. He has received many prizes up to the cross of the legion of honor. Some years ago he lectured, using his own models in illustration. He is the author of several works on surgical and medical themes.

AVADUTAS, a sect of self-torturing fanatics among the Hindus, who put their bodies to such extremes of pain as to produce deformity. Begging is their means of subsistence.

AVA'LOS, FERDINANDO FRANCESCO D', 1490-1529; Marquis of Lescara, and one of Charles V.'s Italian officers. When a mere boy he married Vittoria Colonna, to whom he was affianced when she was but four years old. At the battle of Ravenna he was wounded and made prisoner, but was soon ransomed, and gained distinction at the fight at Vicenza, 1513; at Milan, which he took from France in 1621; at Como; and in several other engagements, including the plundering of Genoa. He won the highest distinction in the great victory for Francis I. at Pavia, 1525, and was made generalissimo. But he ruined his fame by joining the conspiracy to drive the Germans and Spaniards from Italy, and then betraying the plot to the emperor. His reward was to have been the crown of Naples, but his wife induced him to decline it.

AVELLANE'DA, GERTRUDIS GOMEZ, DE, 1816-64; poet and novelist; the daughter of a Spanish naval officer. In 1840, she produced, in Madrid, a successful drama, *Leonicia*, and in 1845 was awarded a laurel crown for a poem praising the queen's clemency. Two vols. of lyrics, 8 vols. of prose, and 16 dramas are of her production.

AVELLINO, a province in s. Italy, 1409 sq.m.; pop. '71, 375,691. It is a mountainous region, but with fertile soil, yielding good harvests. It is watered by the Calore and Ofanto rivers. Chief t., Avellino.

AVEMPACE (ABU BEKR MOHAMMED IBN JAHYA), probably b. in Saragossa near the close of the 11th c., d. at Fez, 1138; the earliest and one of the most distinguished Arab philosophers in Spain. He was a physician, mathematician, astronomer, and poet, though now known only from his metaphysical speculations. The most important of his works, and one noticed by Averrhoes, is *Regime, or Conduct of the Solitary*, which the author set forth as a system of rules by which man may rise from the life of the senses to the perception of pure intellectual principles, and may participate in the divine thought which sustains the world.

AVENBRUG'GER. See AUENBRUG'GER.

AVENTURINE, the name of certain specimens of feldspar and quartz having the property of reflecting or refracting light in various colors from points inside the stone. In some cases the effect is produced by the presence of mica in small scales. A. is imitated by the Venetian glass makers, who outdo the original in beautiful effects. The name signifies "accident," and the discovery is said to have come from the dropping of brass filings into melted glass.

AVENZO'AR (ABU MERWAN ABDALMALEC IBN ZOHR), 1072-1162; a Spanish Arabian physician, pupil of his father. He made earnest efforts to reduce medicine to the plane of experimental science. Some of his works have been published, and one is spoken of by Averrhoes.

AVERELL, WILLIAM W., b. N. Y., 1820; a graduate of West Point; served on the frontier and in the war against the rebellion, rising from lieut. of mounted riflemen to maj.gen. He resigned in 1865, and in the next year was appointed consul-general to the dominion of Canada.

AVERY, WAITSTILL, 1730-1821; b. Conn.; a patriot of the American revolution. He was one of the signers of the Mecklenburg declaration, a member of the Hillsborough congress, of the North Carolina congress, and first attorney-general of the state. During the war he was in active service as col. of militia.

AVEZAC, AUGUSTE GENEVIÈVE VALENTIN D', 1777-1851. He was a native of Hayti, a lawyer, and practiced with success in New Orleans. He had also practiced medicine. After service in the war of 1812 he settled in New York. President Jackson made him minister at the Hague in 1831, and he again filled the office in 1845-49.

AVEZZA'NA, JOSEPH, b. Italy, 1797, d. 1879. He fought under Napoleon, 1813-14; served in the Sardinian army in 1821, in which year he was sentenced to death and hanged in effigy for taking part in a students' insurrection in Turin. He fled to Spain, took part in a revolution, was captured, and escaped being shot only by the intervention of an English consul. Next he appeared in Mexico, where he fought the Spaniards and won the rank of gen., and was for a time commander-in-chief of the troops of the republic. In 1834, he came to New York, married an Irish lady, and engaged in mercantile business. On the outbreak of the revolution of 1848, he returned to Italy, and was in command of the national guards of Genoa. After an unsuccessful struggle he went to Rome, then under republican government, and was made minister of war and commander-in-chief of the army. Being unsuccessful, he fled in disguise with Garibaldi to New York. In 1860, he went back and joined his old chief in the campaigns which resulted in freeing Italy from her petty tyrants. He was elected many times to the Italian parliament, and, when he died, was chief of the "Italia Irredenta" society. He was at one time U. S. consul at Genoa.

AVICEBRON', or SALOMON BEN GABIROL, about 1045-70; a Jewish writer on philosophy and metaphysics, of Saragossa, Spain. Jews knew him only from his poems, but Christian schoolmen of the century following his time were much influenced by his works, in a Latin translation called *Fons Vitæ*, or *Sapientie*, wherein A. sets forth his idea of the objects of metaphysics.

AVILA, a province in Spain; 2569 sq.m.; pop. '70, 175,219. It is bounded n. by Valladolid, e. by Segovia, s. by Toledo, and w. by Salamanca. The n. part is level, with marl soil not especially productive, and has a climate ranging from extreme heat to extreme cold; agriculture is the chief occupation. The s. part is a mass of rugged ridges, with a few well-watered and fertile valleys; the winter is long and severe, but the climate is healthful; cattle-raising is the main business. Five small rivers intersect the province. There are minerals in the mountains, but no mines are worked. Quarries of marble and jasper yield some profit. Merino wool has been the principal product; but all industries are repressed by feudal rights and laws of entail and mortmain. Game is plentiful, and fish are abundant. Silk worms are cultivated; oil, olives, chestnuts, and grapes grow naturally. There is very little trade or manufacturing industry.

AVITUS, ALCIMUS ECDICIUS, d. 525; a poet and bishop of Vienna, who was canonized as a saint because of his opposition to Arianism. He left a poem on the creation and original sin, which has been thought to have some resemblance to Milton's *Paradise Lost*.

AVLO'NA, or VALONA; a seaport in Albania, the ancient *Audon*, in the pachalik of Janina, on the gulf of A.; pop. 6000. Trade is in the hands of the Christian portion of the people. The Turks manufacture arms and woolen goods.

AVO'LA, a t. in Sicily, 13 m. s.w. of Syracuse; pop. 11,912. A. was ruined by an earthquake in 1693, but was soon rebuilt. It has a fishery and a sugar refinery; and the neighborhood is still famous for honey, the "honey of Hybla" so much praised by ancient writers.

A'VON SPRINGS, a resort for invalids, its mineral waters being valuable in cutaneous diseases and rheumatism. Avon is a village in New York, 19 m. s.s.w. of Rochester, beautifully situated on a small plateau near the Genesee river.

AVOYELLES, a parish in Louisiana, on the Red river; 800 sq.m.; pop. '70, 12,926—6175 colored. It is chiefly level and low, and subject to overflows from the river. Corn, rice, cotton, and sugar are the leading products. Chief town, Marksville.

AWÁJI, an island in the inland sea of Japan, between Shikoku and the mainland, celebrated for its crackle and yellow glazed pottery. In Japanese mythology, it was the first created of all the islands.

AWARD, the decision of arbitrators or referees, or the document containing their judgment. An A. must be consonant with and follow the submission, and affect only the parties; it must be final, certain, specific, without palpable or apparent mistake, and must be possible to be performed. The effect of an A. is a final judgment between the parties in all matters submitted. It transfers property as much as does the verdict of a jury, and will estop the statute of limitations. An A. may be enforced by an action at law or under a rule of court. Courts have no power to alter or amend an A., but may recommit to the referee in cases of uncertainty, mistake, etc.

AWÁTA, a village in the suburbs of Kyoto, Japan, famous for its yellow faience. A. pottery was invented in the 17th c., is decorated, and by the Japanese is called Tamago Yaki (egg-ware). It is largely exported to the United States.

AWYAW, AGA-OJO, or OYO, a city in central Africa, the capital of Yoruba; est. pop. 70,000.

AX, or DAX (anc. *Aquæ Augustæ*), a noted watering place in France, at the foot of the Pyrenees, 2000 ft. above the sea, on the Odour river, 32 m. by rail n.e. of Bayonne. It is a village of about 2000 inhabitants. There are more than 50 springs varying in temperature from 100° to 200°. One of the springs is famous for curing leprosy.

AXAYCA'TL, Emperor of Mexico, the father of the second Montezuma. About 1467 he led his Aztecs to the conquest of Tehuantepec, and afterwards defeated a rebellion that threatened his capital, the city of Mexico. He died suddenly, about 1477. Half a century later the soldiers of Cortes occupied A.'s palace, and discovered an immense treasure of gold and silver in ore and bars, with jewels, and many curious articles of manufacture.

AXE, one of the oldest tools used by man; formed in the early ages of stone, bronze, copper, and iron. At present an A. is mainly of wrought iron, with a cutting edge of fine steel. The butt or main part, is made of good rolled iron, cut into suitable lengths, hollowed at the middle so that when the ends are brought together the hollow will form the eye for the handle. Between the ends is welded in a cutting piece of steel, projecting an inch or more beyond the iron, and thinned down nearly to an edge. Having been properly tempered and ground, and fitted with a wooden helve, the axe is ready for use. Forms and weights vary according to the use to which the tool is to be put. For very hard timber the cutting edge is narrow, and the whole instrument heavy; for carpenter work on soft timber, the edge is of 8 to 12 in., as in the broad-axe. Common forest axes weigh from 3 to 7 lbs. Besides these forms, there are the adze, a tool used for chipping, or rough planing by carpenters, and the pickaxe (which is not an axe in any sense) for digging in hard ground. American axes have a high reputation in Europe, and have to some extent supplanted the English article in the markets of that country.

AXIM', a t. on the Guinea coast, Africa, 73 m. w. of Cape Coast Castle. In 1642, it was taken from the Portuguese by the Dutch, who, in 1872, ceded it with the whole of their possessions in Guinea to the English.

AXINITE, a mineral containing oxide of iron, lime, alumina, and silica, occurring in flat, sharp crystals, edged like an axe.

AXLE, the bar of metal or wood, connecting the wheels and supporting the body of a wheeled vehicle. In railway carriages the A. is fastened to and revolves with the wheels.

AYACU'CHO, a department of s. Peru, on the e. side of the Andes, 24,213 sq.m.; pop. 147,909. It has a rough surface and variable climate; little is done in mining; cat-

tle and honey-raising and agriculture are the principal employments. The battle of Dec. 9, 1824, fought in this department, secured the independence of the Spanish South American colonies. The Spaniards, in largely superior force under Laserna, were effectively beaten and their leader captured by the colonists under gen. Sucre, the result being the capitulation of the Spaniards in Peru and the surrender of all their posts.

AYLMER, a village in Ottawa co., province of Quebec, Canada, on lake Deschênes, at the foot of steam navigation for the upper Ottawa. Pop. about 1700.

AYLMER, a lake about 50 by 30 m., in British America, 80 m. n. of Great Slave lake.

AYLMER, or ELMER, JOHN, 1521-94; an English theologian, a graduate of Oxford and tutor to lady Jane Grey. Mary's accession compelled him to abandon the country, and he went to Switzerland, where he wrote a reply to John Knox's argument against female sovereigns, in which A. highly flattered Elizabeth. He returned after E.'s accession, and was made archdeacon of Lincoln, and one of the synod that settled the doctrines and discipline of the church. As bishop of London, 1576, he went so far in retaliating for Roman Catholic intolerance as to be rebuked by the privy council.

AYMARAS, the name of an aboriginal people of South America, now chiefly in Bolivia, numbering about 200,000. They claim a very ancient origin from a people who came from the north and made the head of their government on the sacred island in lake Titicaca, and they also claim that they furnished the Quichian or Inca people with their religious ceremonies and knowledge of arts. It appears that the A. tilled the earth, built large and even splendid edifices, were familiar with painting and sculpture, and probably knew something of astronomy. They venerated the dead, putting them in a sitting position in large stone tombs that would hold a dozen, ranged so as to face each other, their feet meeting in the center of a circle. Some tombs were of brick; some of several stories with a body in each story; and all had openings facing the east, as the A. were sun worshippers. The present sun they called the fifth of a series, all of which had risen from the sacred lake. The Peruvian Incas gradually subdued the A. and took possession of their country. The existing A. are Roman Catholics. They are of ordinary Indian complexion, but of intelligent though melancholy expression. Agriculture is their chief reliance.

AYRES, ROMÉYN B., b. N. Y., 1825; a graduate of West Point; served in the Mexican and civil wars; for good conduct in the Richmond campaign made brevet maj. gen. of the U. S. army and of volunteers.

AYSCUE, Sir GEORGE, 1616-76; an English naval commander. He was knighted by Charles I., and in the civil war took the side of the parliament, commanding in the waters around Ireland. In 1651, he reduced Barbadoes and Virginia to subjection, and the next year assisted Blake in the struggle with De Ruyter and Van Tromp. Four years later he had command of a squadron in the "four days" battle, in which the *Royal Prince*, his flag ship, stranded and was surrendered to the Dutch, who kept him a prisoner for many years.

AZADIRINE, a bitter extract sometimes used in place of quinine. It is got from the bark of an East Indian tree known in America as the "Pride of China."

AZAIS; PIERRE HYACINTHE, 1766-1845; a French author and philosopher. He was a teacher in the college at Tarbes, but not liking the duties he became secretary to the bishop of Oleron; he soon gave up the place, and supported himself by playing the organ in a church. When the revolution of 1792 broke out, A. was one of its warmest advocates, but the horrors perpetrated made him a vehement opponent, and a pamphlet severely condemning the movement made immediate flight necessary. He returned to Paris in 1806, and in 1809 published his *Des Compensations dans les Destinées Humaines*, an optimist's view that good and evil are about fairly balanced, and that it is the duty of good citizens to submit to a fixed government. The idea naturally pleased Napoleon, who made A. professor at St. Cyr. At a later period he was in the public libraries at Avignon and Nancy. His Bonapartism kept him out of place for some years after the restoration, but he finally got a pension which placed him beyond the reach of want. According to A., all existence, whose cause is God, is the product of two factors, matter and force. Matter consists of primitive atoms. Force is expansive and subject to the law of equilibrium. All the phenomena of the universe are successive stages of the development of this one force acting on the primitive atoms; and this is traced in three orders of facts: 1, the physical; 2, the psychological; and, 3, the intellectual, moral, and political. In the physical, development can be traced from the simplest mechanical motion up through the more complex forces of light, heat, and electricity to the power of magnetic attraction, by means of which the second great order of facts is produced out of the first; for magnetic force acting on elastic bodies creates the primitive living globe, which is shaped like a tube open at both ends. From this first vital element a gradual ascent can be traced, culminating in man, who differs from other animals in the possession of intellect, or consciousness of the ideas which external things impress upon him. The immaterial in man, or his soul, is the expansive force inherent in him. Moral and political phenomena are the results of two primitive instincts, progressive and self-conservative, corresponding to the forces of expansion and repression. From

the reciprocal relations of these instincts may be deduced the necessary conditions of political and social life. The ultimate goal of life is the fulfillment of the law of equilibrium, the establishment of universal harmony. When that is accomplished, the destiny of man will have been achieved, and he will vanish from the earth, and that event may be looked for in 7000 years. For establishing complete universal equilibrium, 5000 years more will be requisite, at which period the present system of things will end.

AZARA, DON FELIX DE, 1746-1811; a Spanish general; wounded in a fight with the pirates of Algiers in 1755. Six years afterwards he was one of the commissioners to settle the boundaries between the Spanish and Portuguese settlements in South America. He was there for twenty years, and developed a strong taste for natural history, publishing an important work on the *Quadrupeds of Paraguay* in Paris in 1801. His chief work, issued in 1809, is the story of the discovery and conquest of Paraguay and the river La Plata.

AZARIAH, a frequent name among the Hebrews, signifying "helped by Jehovah." Eleazer has the same meaning. A number of A.'s are mentioned in the scripture, the most important being the prophet who met Asa on his return from a victory over the Cushites, and warned the king to suppress the worship of idols; 2, a son of Jehoida, who made special effort to restore the worship of the temple and put down Athaliah's usurpation; 3, a high priest who assisted Hezekiah in purifying the services of the temple; 4, called in Chaldaic "Abednego," one of the three cast into the fiery furnace.

AZAZEL, the word inscribed upon the lots cast by the high priest of the ancient Hebrews on the day of atonement, to determine which of the goats selected for a sin-offering should be the scape-goat, and which one should be sacrificed. Critics are unable to decide upon the meaning of the word.

AZEVEDO COUTINHO, JOZÉ JOAQUIM (DA CUNHA), 1742-1821; the last inquisitor general of Portugal. He was bishop of Pernambuco in 1794, and became noted in 1798 for publishing in London an argument against the suppression of the slave trade. He was appointed inquisitor general in 1818. He is the author of a narrative of the conquest of Rio Janeiro in 1711 by Duguay-Trouin.

AZEVEDO Y ZUNIGA, GASPARD DE, d. 1606; Count of Monterey and viceroy of Mexico and Peru. He fitted out an expedition under Pedro Fernandez de Quiro to search for the supposed great continent in the s. polar ocean. Some small islands were found, but not the continent.

AZO, PROFESSOR, a distinguished professor of civil law in the university of Bologna, in the early part of the 13th century. A. was one of the most eminent of the glossists, or commentators, of his time, and Savigny calls his works the most important of that school which have come down to us. The name is sometimes given to Azzo, or Azzolenus; also Azo Soldanus, from the surname of his father.

AZOIC AGE, that period of geological time preceding the appearance of vegetable or animal life on earth. Constantly occurring discoveries render it impossible to fix a limit for the close of the age.

AZOTH, the panacea of Paracelsus, regarded by his followers as "the tincture of life."

AZPETIA, a fortified t. in Spain on the Urola, 15 m. s.w. of San Sebastian; pop. 5300. During the Carlist movements in 1870-74, A. was the seat of the court for the management of the war; and the famous monastery of San Ignacio, dedicated to Loyola, was used for military purposes. The birthplace of Ignatius Loyola was near the town.

AZRAEL, in Jewish and Mohammedan belief, the angel who attends the dying, and separates the soul from the body.

AZYMITES, the name given by the eastern to the western church, arising from a difference about the use, in the Lord's supper, of leavened or unleavened bread. The western, or Latin branch, insisted that unleavened bread might be used, and the Greek church stigmatized the Latins as "azymites," from the Greek *α*, "not," and *zume*, "leaven." The Latins retorted with "pro-zymites," but the terms, intended for reproach, soon passed, with the whole discussion, into history as useless additions to polemical nomenclature.

B

BAA'DER, FRANZ XAVER VON, 1765-1841; a German theologian. He was the third son of the court physician, and his elder brothers were distinguished, Clemens as an author, and Joseph as an engineer. Franz graduated at the university of Ingolstadt in 1782; assisted his father in medicine, but disliked the profession; studied engineering in the mining districts, and lived four years in England, where he became acquainted with rationalistic philosophy, which he thought little less than satanic. The religious speculations of Eckhart, St. Martin, and especially Böhm, were more to his

mind. He held intimate friendship with Jacobi, and learned something of Schelling. Though deeply interested in philosophy, he kept to his engineering practice, became superintendent of mines, and was ennobled for valuable services. His first published work was *Fermenta Cognitionis*, in which he combated modern philosophy, and recommended that of Böhm. In 1826, he was appointed professor of philosophy and speculative theology in the new university of Munich. Some of his lectures, while occupying that chair, have been published. In 1838, he opposed the interference in civil matters of the Roman Catholic church, to which he belonged, for which opposition he was interdicted from lecturing on the philosophy of religion during the last three years of his life. He also favored a reconstruction of the church—a church without a pope. B. is considered to have been the greatest speculative Roman Catholic theologian of modern times, and his influence has gone beyond the bounds of his own church.

BABBITT METAL, an alloy containing 4 parts of copper, 24 of best Banca tin, and 8 of antimony. To the melted copper half the tin and the antimony are added gradually, followed by the rest of the tin. The product is a soft metal, much used for reducing friction of axles in heavy machinery, the journals being so made that the babbitting may be readily renewed when worn. It was invented by Isaac Babbitt, 1799–1862, a goldsmith of Taunton, Mass. Congress rewarded him with a gold medal and \$20,000.

BABCOCK, RUFUS, D.D., b. Conn., 1798; a graduate of Brown university; Baptist minister, ordained in 1823, and established at Poughkeepsie, N. Y., and afterwards at Salem, Mass.; in 1833, he was president of Waterville college; in 1836, pastor in Philadelphia; again in Poughkeepsie in 1839, and lastly in Paterson, N. J. He has been secretary of the Pennsylvania colonization society, of the American Sunday-school union, and of the American and foreign Bible society; editor of the *Baptist Memorial*, and author of *History of Waterville College*, *Tales of Truth for the Young*, *The Emigrant Mother*, etc.

BABINGTON, CHURCHILL, b. England, 1821; professor of archæology; has written on botany, ornithology, numismatics, archæology, etc., and edited the orations of Hyperides from recently discovered manuscripts.

BABISM (from BÂBĪ, or BÂBY); the appellation of a sect in Persia, founded by Seyd Mohammed Ali, b. about 1824, who assumed the name of "Bâb," i.e. "the gate." On returning from a pilgrimage to Mecca in 1843, Seyd appeared in his native city (Shiraz) with a new commentary on the Koran, and soon became engaged in controversy with the regular priests, who, exasperated by his free criticism of their conduct, obtained an order forbidding him to teach in public and confining him to his house. Here he taught privately, increasing his pretensions, and declared that he was Nokteh, "the point;" not merely the recipient of a new divine revelation, but the focus in which all preceding dispensations would converge. He gained proselytes rapidly, among them a woman—a wonderful circumstance in any country of the east—known as Gourred-Oul-Ayn ("Consolation of the Eyes,") because of her surpassing loveliness. The new religion made rapid progress, and the efforts of the authorities to suppress it produced civil war. Hussier, one of Seyd's disciples, was taken, after defeating several expeditions sent against him, and put to death in 1849; and the next year Balfouroushi, another leader, was slain in battle. The Bâb himself was imprisoned and executed, but his death did not discourage his followers. They recognized Mirza Yahya, a youth of noble descent, as his successor, who established himself in Bagdad, where he is now, or was not long ago, living. An attempt in 1852 of some zealous Bâbis to assassinate the Shah led to a terrible persecution, in which the beautiful "Consolation of the Eyes" perished. The Bâb doctrines are essentially a system of pantheism, with additions from gnostic and other sources. All individual existence is regarded as emanating from the superior deity, by whom it will ultimately be reabsorbed. Great importance is attached to the number 7, as indicating the attributes supposed to be displayed in the act of creation; and to the number 19, which mystically expresses the name of the Deity himself, and is, moreover, the sum of the prophets among whom the latest incarnation of the divine nature is conceived to be distributed in the present dispensation. The sacred college cannot become extinct until the final judgment, the death of any of its members being immediately followed by a re-incarnation, as in the case of the grand lama. Moses, Christ, and Mohammed are considered to be prophets, but merely precursors of the Bâb. The morals of the sect are good; polygamy and concubinage are forbidden; the veiling of woman's face is omitted, and the equality of the sex is so far recognized that at least one of the 19 prophets must always be a female. Asceticism is discountenanced, mendicancy prohibited, and hospitality, charity, generous living, and abstinence from intoxicating liquors and drugs, are taught and practiced.

BA'BOO, a title of respect equal to "Mr." in English, given in India to educated and wealthy natives noted for liberal views, public spirit, and generosity.

BABUYA'NES ISLANDS, in the Pacific between the Loo Choo islands and Formosa; Calayan and Babuyan are the most important. They are fertile, and furnish a large quantity of sulphur. Batan is the largest town. Pop. of the islands est. 8,000.

BABYLONISH CAPTIVITY (*ante*), the carrying into captivity of 200,000 people of Jewish cities, about 713 B.C., by the officers of the king of Assyria. Before this, however, there was the "Assyrian captivity," the result of the invasion of the kingdom of

Israel by three or more successive Assyrian kings. About 762 B.C., Pul imposed a tribute upon Menahem. About 738 B.C., Tiglath-Pileser carried away in large part the trans-Jordanic tribes and the inhabitants of Galilee. Shalmaneser made two invasions, and, in 720, after a siege of three years, took Samaria and carried many Israelites away as captives—populating Samaria by Babylonians and other foreigners. It is supposed that Tiglath, Pileser took the Israelites away to people his great city. His successor, Shalmaneser, made Hoshea, the king of Israel, a tributary, and when the tribute was not paid he took Samaria by way of punishment, and carried to Assyria the king and all the most desirable remaining population of the ten tribes. These were settled in distant cities, and their places were supplied by colonies from Babylon and Susis. As captives, the people were treated with no especial harshness. They were not bondmen, as one might suppose from the term “captive;” but even in Babylon their elders retained the power of life and death over their own people; and at a later period the Jews in the principal cities were governed by an officer of their own nation, as was the case in Egypt under the Ptolemies. The Jews in Assyria themselves held slaves; the book of “Daniel” tells of a Jew in high political station, and in “Esther” we find their power and consequence in the Persian empire celebrated. Doubtless their lot was more comfortable than that of other conquered nations among whom they dwelt. Much effort has been made to discover the ultimate condition or fate of the ten tribes. Josephus in his day thought that they dwelt in large communities somewhere beyond the Euphrates. Rabbinical tradition makes the same assertion, with many imaginative exemplifications. Christian writers have traced them all over the world. Some find them among the Afghans; some tell of a Jewish colony at the foot of the Himalayas; the “Black Jews” of Malabar claim an affinity or descent from them; they have been supposed to be fathers of the Tartars, of the Nestorians, of the North American Indians, and by some recent scholars of the Anglo-Saxons. The best that can be done, in the light of established history, is to trace their footsteps in four directions. After the captivity, some returned and mixed with the Jews; some assimilated with the Samaritans and became enemies of the Jews; many remained in Syria, mixing there with other populations, and forming colonies throughout the east; but most of them probably apostatized in Assyria, adopting the idolatry of the nation around them, and were finally merged into the stronger and more numerous people.

The second, or “Babylonian captivity,” consists of two distinct deportations. Nebuchadnezzar made several invasions of Judea, and finally destroyed Jerusalem and the temple, and carried the people to Babylon. The first principal deportation was in 598 B.C., when Jehoiachin, and all the nobles, soldiers, and artificers were carried away; the second great deportation followed the destruction of the temple and the capture of Zedekiah, 588 B.C. Although the number of persons carried away is in several instances set down, it is not probable that such numbers represent the whole deportation, for the sum total on record can be but a mere fraction of the Jewish people. The captives were treated not as slaves, but as colonists. There was nothing to hinder a Jew from rising to the highest eminence in the state or holding the most confidential office near the throne. They had no temple and offered no sacrifices; but the rite of circumcision was observed, and their genealogical tallies were kept so that they were usually able to tell who was the rightful heir to the throne of David. The first great event in the *restoration of the Jews* was the decree of Cyrus, 536 B.C., under which 42,360, with 7537 slaves and cattle and personal goods, left Babylon under Sheshbazzar. They laid the foundation of the second temple 53 years after the destruction of the first. The work was stopped almost immediately. But under Darius the Jews found favor, and under the guidance of Ezra, Nehemiah, and others, Jerusalem was to some extent restored, and exiled families doubtless returned and occupied the country round about. Nevertheless, the great mass of the Jewish people remained in the countries over which they had been scattered. Before the captivity, many Jews had settled in Egypt; others in Sheba. Among those who returned to Judea, about 30,000 are said to have been of the tribes of Judah, Benjamin, and Levi. Recent students conclude that about six times as many Jews preferred to remain in Assyria, where they kept up the national distinction, and were known to their brethren as “the dispersion,” that is, Jewish people residing beyond the limits of Palestine. This dispersion was in three directions or countries: in Babylonia, in Egypt, and in Syria. A still later and more perfect “captivity” was that suffered by the people of Palestine under the Romans, when, after the massacre of untold myriads of their people, the Jews were reduced to abject bondage. Josephus says that 1,100,000 people were slain in the siege of Jerusalem by Titus, and 97,000 were captured and distributed among the Roman provinces, butchered in amphitheaters, thrown to wild beasts, or sold to slavery in Egypt. Doubt is cast by some writers on the numbers given by Josephus. The last stand of the Jews for national existence was about 133 A.D., when the struggle resulted in the practical extirpation of the people from their chosen land; and since that event—the rebellion of Bar-cholab—the descendants of Abraham have been unable to present, anywhere on the earth, even the semblance of an organized nation.

BACCHANALIA, or DIONYSIA, festivals in honor of Bacchus. Four were held at Athens. One was in Dec., after the vintage was over, when a nude and indecent procession was had, slaves were given brief liberty, and general drunkenness prevailed. One

was in Jan., after the new wine had been pressed out, when the state bore the cost of a public banquet, a procession, and a dramatic entertainment. In Feb. came the flower festival, lasting three days; on the first the new wine was tasted, and candidates were initiated into the mysteries of Bacchus; on the second there were public games; on the third flowers were offered to Dionysius, presents were made between friends, and slaves were free for the time. The fourth, or great festival, came in Mar., and attracted strangers from all parts of the country. It was conducted by the chief archon, and paid for by the state. It included the giving of a prize for the best drama, a banquet, a procession, and theatrical performances. Like all others, this festival was a season of riotous and drunken indulgence. Bacchus was represented, accompanied by women frenzied with drink or excitement, carrying cymbals, dancing, and singing songs in honor of the god; and with them were men disguised as wild beasts, fauns, and satyrs. In Rome the excesses became so gross that the state forbade such celebrations altogether.

BACCHAN'TES, women who took part in the secret Bacchic festivals; also males, when they were admitted. In the old universities a student in his first year was a B., and was made to pay for the drinks of his elders, and otherwise abused. There was also an order of B. whose members were idle or dissipated students, getting more of their living by begging and theft than by honest occupation. Modern "hazing" may be a reminiscence of the mediæval Bacchantes.

BACH, JOHANN CHRISTIAN, 1735-82; eleventh son of Johann Sebastian B., was chosen one of the organists of Milan cathedral, but was occupied mainly in composition for the voice. In 1763, he produced, in London, the opera of *Orione*, which was successful. Schubert says: "This man had it in his power to be whatever he would, and he may well be compared to the Proteus of fable. Now he spouts water; now he breathes forth flame. In the midst of the trivialities of his fashionable style, the giant spirit of his father may be discovered."

BACH, JOHANN CHRISTOPH, 1643-1703; eldest son of Heinrich, and one of the best organists and composers of his time. His compositions show "that he was truly a great man, as rich in invention as he was strong in the power of musical expression of emotion."

BACH, JOHANN CHRISTOPH FRIEDRICH, 1732-95; tenth son of Johann Sebastian, author of numerous compositions, ecclesiastical and secular. He was nearly all his life kapellmeister to the duke of Lippe Schaumburg.

BACH, KARL PHILIPP EMANUEL, 1714-88; second son of Johann Sebastian. He was probably the most highly gifted of the eleven brothers, and his influence on the development of certain musical forms gives him a prominent place in the history of the art. He studied in the Thomas school, and afterwards in the university of Leipsic, where jurisprudence was his preference. In 1738, he went to Berlin, and soon afterwards was appointed chamber-musician to Frederick the great. In 1767, he became kapellmeister at Hamburg, where he passed the remainder of his life. His most ambitious composition is the oratorio of *Israel in the Wilderness*. The greater portion of his numerous works was written for his favorite instrument, the clavier (the piano of that day). His essay on *The True Method of Harpsichord Playing* was long a standard work. Clementi professed to have derived from B. his distinctive style of piano-forte playing, and Haydn is said to have acknowledged his deep obligation to B.'s works. It was from these works that Haydn learned the form of the sonata and symphony, of which B. "may fairly claim to have been the originator, though Haydn enriched it and gave it permanence." As a psalm, ode, and song writer, B. surpassed his contemporaries, and gained great popularity. His idea of the purpose of music he explained by saying: "In my opinion the grand object of music is to touch the heart, and this end can never be obtained by mere noise, drumming, and arpeggios; at all events not by me."

BACH, VEIT, a German Protestant of Presburg, Hungary, by trade a baker; founder of the remarkable musical family of Bach.

BACH, WILHELM FRIEDMANN, 1710-84; eldest son of John Sebastian. He was a natural musician, nearly rivaling Mozart in precocity, and remarkable for extemporaneous composing. At Leipsic university he studied jurisprudence and mathematics; but music was not neglected. He was organist of St. Sophia's church, Dresden, and director and organist at Halle. Though acknowledged to possess the highest genius, he was so coarse, rude, and ill-tempered as to be unbearable. He was also strangely absent-minded, and a slave to drink.

BACHE, ALEXANDER DALLAS, 1806-67, an American physicist; b. in Philadelphia. He was great-grandson of Benjamin Franklin; graduated at West Point, as lieutenant of engineers, in 1825, remaining some time in the academy as a teacher. He was employed under col. Totten on the fortifications at Newport, where he married Nancy Clarke Fowler. B. was professor of natural philosophy and chemistry in the university of Pennsylvania, and an early member of the Franklin institute, the journals of which gave an account of his scientific labors. In company with others he built an observatory in which, for the first time in the United States, the periods of the daily variations of the magnetic needle were fully determined, and other interesting observations made.

In 1836, he became president of the trustees of Girard college, and visited Europe to examine educational systems for the information of the board, who were about to arrange the plan of the institution. His report in 1838 was of great value in suggesting improvements in our educational system. Before the college was organized, B. established a system of free education in Philadelphia, serving for a time gratuitously, at the same time assisting the British association in the examination of meteorological and magnetic phenomena. In 1842, he returned to his professorship in the university, and in 1843 was appointed successor to Hassler in the U. S. coast survey. This important service he reorganized and brought to its present recognized efficiency. He was also light-house commissioner, superintendent of weights and measures, regent of the Smithsonian institution, vice-president of the U. S. sanitary commission, received the degree of LL.D. from several colleges, medals from foreign governments and learned bodies, was president of the American philosophical society, president of the association for the advancement of science, and associate of many important scientific institutions at home and abroad. He gave \$42,000 to the national academy of science for the promotion of its object. His important works are: *Observations at the Magnetic and Meteorological Observatory of Girard College*, reports on weights and measures, and various essays in the *Proceedings of the Association for the Advancement of Science*.

BACHE, BENJAMIN FRANKLIN, b. Va., 1801; great-grandson of Benjamin Franklin; graduated at Princeton, and in medicine at Pennsylvania university; assistant-surgeon in the army in 1824, and surgeon in 1828; professor of natural science and natural religion in Kenyon college; fleet surgeon of the Mediterranean squadron in 1841, and of the Brazil squadron in 1848. He established at New York the laboratory that supplied the medical department of the navy, and was director from 1855 to 1871, rendering important service to the union armies during the rebellion by supplying the laboratory from his own resources. In 1871, he was made medical director, with the rank of commodore.

BACHE, RICHARD, b. England, 1737; d. Penn., 1811; a Philadelphia merchant, son-in-law of Benjamin Franklin, and first U. S. postmaster-general.

BACHE, SARAH, only daughter of Benjamin Franklin, 1744-1808. During the revolution she was active in collecting clothing and money for the suffering patriot armies, at one time employing more than 2000 women and girls in making garments for soldiers. She also served in the hospitals, and was otherwise noted for patriotism and benevolence.

BACHIAN, one of the Molucca islands just s. of the equator, 127° e. It has about 800 sq. m.; is of irregular form, and mountainous. Hot sulphur springs bespeak volcanic action. The island is well wooded, and sago, cocoa nuts, and cloves are abundant. There is one large grove of nutmeg trees. It is the most eastern point on the globe inhabited by any of the quadrumana. The people are the Sirani, or Christian descendants of the Portuguese, some Malays, a few Papuans, and a colony from the Celebes. The government is headed by a sultan under the protection of the Dutch. The chief town is called Amassing by the natives.

BACHMAN, JOHN, b. New York, 1790; naturalist and Lutheran minister, pastor in Charleston, S. C., in 1822. He was assistant to Audubon, and chief author of the work on North American quadrupeds. Among his own works are: *A Defense of Luther*, and *Characteristics of Species and Genera as Applicable to the Doctrine of the Unity of the Human Race*.

BACKUS, CHARLES, D.D., 1749-1803; a native of Connecticut, a graduate of Yale, and Congregational pastor in Somers, Conn. He was for many years a teacher of theology, and had the training of such men as Dr. Woods of Andover, president Moore of Amherst, and president Davis of Hamilton college.

BACKUS, ISAAC, 1724-1806; a native of Connecticut. He left the Congregationalists for the Separatists, or New Lights, and these sympathized closely with the Baptists, of whom B. became a leader, and by his own exertions largely increased the prosperity of the denomination. He was a strong advocate of the entire separation of church and state, and went before the continental congress in 1774 to ask for the Baptists the same privileges that were granted to other sects. His principal work is a history of New England with particular reference to the Baptists. This history he abridged, and brought down to 1804.

BACON, ANNE, 1528-1600; wife of sir Nicholas B., second daughter of sir Anthony Cooke, sister of the wives of lord Burleigh, sir Henry Killigrew, and sir John Russell, and mother of lord Bacon. Her father, from whom she acquired a superior education, was tutor of Edward VI.

BACON, DELIA, 1811-59; sister of Leonard, eminent as a teacher; author of *Tales of the Puritans*, *The Bride of Fort Edward*, and *Philosophy of the Plays of Shakespeare Unfolded*, in which she endeavors to prove that lord Bacon was the real author of the Shakespearean plays.

BACON, LEONARD, D.D., LL.D., b. Michigan, 1802; son of a Congregational home missionary from New England; graduated at Yale in 1820, and at Andover in 1824; the

next year, and until 1866, pastor of the First church in New Haven; acting professor of revealed theology in Yale from 1866 to 1871, and since then lecturer on ecclesiastical polity and American church history. He was one of the editors of the *Christian Spectator*, and is still an editor of the *New Englander*, of which he was one of the founders. He was also for 15 years one of the editors of the *Independent*. Dr. B. is the author of *Select Practical Writings of Richard Baxter, with a Life of the Author*; *Manual for Young Church Members*, *Slavery Discussed*, and various historical discourses and essays. As a thinker and writer he is noted for breadth and vigor.

BACON, LEONARD WOOLSEY, D.D., b. New Haven, Conn., 1830; a writer and theologian, son of Leonard B., graduated at Yale, 1850. After officiating as a clergyman in various places, he was pastor, for longer or shorter terms, of the First church, Litchfield, Conn., of the New England Congregational church, Brooklyn, and of the First church, Stamford, Conn.; subsequently passed several years in Europe, chiefly in Geneva, as student, preacher, and writer; now pastor of the Park Congregational church, Norwich, Conn.

BACON, NATHANIEL, b. England, 1630-40; d. Va., 1677; a lawyer and member of governor Berkeley's council, leader of an alleged insurrection against the colonial government under pretense of resisting aggressions of the Indians. Berkeley was forced to make many concessions to demands for better government; but he broke his promises, and a brief civil war followed, in which Jamestown was burned (1676), and the governor took shelter in an English vessel. Before Bacon completed plans for re-establishing the government, he died from disease taken in an Indian campaign, and the rebellion soon came to an end.

BACS, or BACSKA, a co. in Hungary between the Danube and the Theiss, 3972 sq. m.; level and very fertile. Its products are wheat, wine, tobacco, horses, and cattle. A canal connecting the two rivers goes through the county. The chief towns are Zombor, the capital, Maria-Theresiopel, and Neusatz. The town of Bacs is on an affluent of the Danube; pop. '70, 3666.

BACTERIUM, a minute and low form of vegetable organism, refractive, spherical, and mobile. It occurs as a fossil; is found in the sap of plants; in the fluids of men, animals, insects, larvæ and imagines, and eggs; is abundant in incipient stages of fermentation and decay of animal and vegetable tissues and substances. Bacteria act as a ferment, changing cane sugar and starch to glucose. They are communicated as germs floating in the air; they assist in the ripening of fruit, and in the regeneration of organic matter, during the formation of cell structure. They thrive equally well in acid, alkaline, or neutral fluids. Many phenomena, otherwise attributed to spontaneous generation, are caused by these minute and omnipresent organisms. Indeed, the difficulty attending most experiments concerning spontaneous generation lies in the uncertainty of removing such germs from an inclosed space, of killing such as remain, and preventing the ingress of others.

BADDECK, a village and capital of Victoria co., N. B., dominion of Canada, on the island of Cape Breton, accessible to steamers.

BADEAU, ADAM, a native of New York; served on Sherman's staff, and was wounded at Port Hudson, in the rebellion. He was gen. Grant's military secretary, was brevetted as brig. gen. of the U. S. army, and was secretary of the American legation in England. He is the author of *Military History of Gen. U. S. Grant*.

BADGER, MILTON, D.D., 1800-73; a native of Connecticut, a graduate of Yale, and in theology at Andover; pastor of a congregational church there; officially connected as secretary with the American home missionary society for 38 years, in which responsible relation he was noted for wise and faithful service.

BADIUS, JODOCUS, or JOSSE, 1462-1535; an eminent painter in Paris, who previously studied at Brussels and Ferrara, and for several years taught Greek at Lyons. He illustrated and printed several of the classics, and produced a life of Thomas à Kempis, and a satire on the follies of women, called *Novicula Stultarum Mulierum*.

BADRINATH. See BHADRINATH, *ante*.

BAEZ, BUENAVENTURA, b. 1820; president of the republic of San Domingo and thrice re-chosen. He was the son of a mulatto, inherited a large fortune, and was prominent in securing Dominican independence. In 1853, he was driven from the country by Santana; returned in 1856; was again driven out in Jan., 1858; again returned in 1865, and was elected for the third time. The next year an insurrection drove him into exile; and in the following year he was again restored. B. endeavored to secure the annexation of Dominica to the United States, but the U. S. senate declined the offer.

BAFFIN, WILLIAM, 1584-1621; an English navigator of whose early life nothing is known. In 1612, he accompanied James Hull in his search for a north-western passage, and in 1613, commanded the English whaling fleet in the Arctic seas. In 1616, he went north in the *Discovery* under Bylot, and explored the inlet now known as Baffin's bay. In 1621, he was killed while trying, in conjunction with a Persian force, to expel the Portuguese from Ormuz.

BAFFO, a Venetian lady of singular beauty and talent, called "the pure." She was captured by pirates in 1580, and made a slave in Constantinople, afterwards becoming the sultana of Amurath III., over whom she had great influence. After his death she was the counselor of her son Mohammed III., who drowned all his father's wives except her. She died during the rule of her grandson.

BAGAUDÆ, or **BAGAUDI**, peasants of Gaul who resisted Roman oppression about 270 A.D., capturing and destroying Augustodunum (now Autun). Claudius temporarily repressed them, but Aurelian made concessions to them, and proclaimed general amnesty. They rose again in 294, and Maximian was sent against them. Their first leader was Victoria; subsequently there were two, Ælianus and Amandus, the latter calling himself emperor. Extant coins show that they had more than one emperor. The two last named fell in battle, and Maximian utterly defeated their forces; but they were troublesome to Rome until the end of the western empire.

BAGHERMI, or **BAGIRMI**. See **BEGHARMI**, *ante*.

BAGNACAVAL'LO, **BARTOLOMEO RAMENGI**, 1484-1542; an Italian painter, whose real name was Ramengi, but he was called B. from the village where he was born. At Rome he was a pupil of Raphael, and worked on the decorations of the gallery in the Vatican. At Bologna he took the leading place, and did much to improve the style of the Bolognese school. His works are distinguished by rich coloring and graceful delineation. The best specimens, the "Dispute of St. Augustin," and a "Madonna and Child," are at Bologna, where he died.

BAGNOLES, a summer resort in France, 13 m. s.s.e. of Domfront; noted for mineral springs and baths. The village is nearly 200 years old, and has recently been greatly improved and adorned.

BAGO'AS, an Egyptian eunuch in the service of Alexander Ochus of Persia, who aided that monarch in conquering Egypt; but the sacrilegious treatment of the sacred objects by Alexander so offended him, that on his return to Persia he poisoned the king, and killed all the sons except Arses, the youngest, whom he placed on the throne. This boy soon displeased B., and was poisoned to exalt Darius Codomannus. B. tried to dispose of the last named by poison, but was detected and poisoned himself about 336 B.C.

BAGOT, a co. in the central part of the province of Quebec, Canada, e. of Yamaska river, intersected by the Grand Trunk railroad. Black limestone and copper are among its products. Capital, St. Liboire. Pop. '71, 19,491.

BAGOT, Sir **CHARLES**, 1781-1843; an English diplomatist; under secretary of state in 1807; special envoy to France in 1814; ambassador to Russia in 1820, and to Holland in 1824. In 1812, he was appointed governor-general of Canada, and died in office.

BAGRADITES, or **BAGRATIDES**, a royal house of Georgia and Armenia, founded by Bagrad; its members were permitted to crown the kings of Armenia. They became Christians at the beginning of the 4th century. The Bagdad caliphs made several of the B. governors of Armenia. The dynasty maintained their independence until the occupation of the country by Russia.

BAHRDT, **KARL FRIEDRICH**, D.D., 1741-92; a German professor of theology, whose attacks upon orthodoxy and the clergy resulted in a year's imprisonment at Magdeburg. He contested the authority of miracles, and was in every way a severe critic of Scripture. His conduct was notoriously irregular; at one time he lectured on moral philosophy in the forenoon, and in the afternoon officiated as landlord of a public house.

BAIKIE, **WILLIAM BALFOUR**, 1824-63; a native of the Orkney islands. He joined the British navy, in which his father was a captain, and was made surgeon and naturalist to the Niger expedition in 1824. The senior officer died before reaching Africa, and B. took command. He explored the Niger for 250 m. in a small steamer, making a voyage of 118 days. In 1857, he was in a second expedition, the vessel of which was wrecked, and all except himself returned to England. He remained and settled for a time, with none but native assistants, at the confluence of the Benue and the Quorra. He formed a sort of commonwealth, in which he was not only a ruler, but teacher, priest, and physician. Within five years he opened the Niger to navigation, made roads, and established a market for the native trade. He studied and made vocabularies of nearly 50 native dialects, and translated into Housa portions of the Bible and prayer book. Only once during his residence was he compelled to use armed force against the surrounding tribes.

BAIL (*ante*) in the United States is substantially the same as in England. One who becomes surety for another is his B. "B. above" are sureties who agree either to satisfy the plaintiff as to his claims and costs, or in case of judgment against a defendant, to deliver him up. "B. below" are sureties for the defendant's appearance, or that he will give bail. "Civil B." is taken in civil actions; "common B." amounts to entering an appearance when fictitious sureties are named; "special B." applies to cases in which there are responsible sureties. B. may be given in all cases of arrest in civil action. It is a general rule that a person held to B. in a civil case cannot be held a second time for the same cause of action, unless in another state. In criminal cases, except capital crimes, the

defendant may generally be admitted to B., and even in the higher crimes B. may be accepted in the discretion of the court, or in the absence of legal provision to the contrary. In any case of offense against the nation, not punishable with death, any United States judge or state judicial officer may take B.; but if the punishment be death, only a United States judge can decide upon B. The form of entering B. is the same in the several states as in England. Mitigation of excessive B. is usually obtained by application to the court; and the exaction of such B. is forbidden by the federal constitution. The power of sureties over the person bailed is wide. They are technically his jailers, and may arrest him anywhere, or at any time, even on Sunday, or in the attendance at court; they may command assistance, and may depute their power to another. Refusing or delaying B. is an offense against personal liberty, but is not actionable unless malice can be shown. Sureties must in most cases be citizens and freeholders, or possessed of means that will satisfy the court.

BAILEN, a t. in Spain, 24 m. n.n.w. of Jaen; pop. 7831; probably in or near the site of ancient Bæcula, where Scipio defeated Hasdrubal in 209, and Masinissa in 206 B.C. Near B. was fought the great battle of Navas de Toloso, in 1212, when the Spaniards broke the power of the Moors, who are said to have left the incredible number of 200,000 of their dead on the field, with a loss of only 95 Christians. Here, July 23, 1808, the French gen. Dupont capitulated, surrendering 17,000 men to the Spaniards—the first great disaster to the French arms in the peninsular war. There is a ruined castle here, formerly belonging to the counts of Benavente, but now to the Osuna family.

BAILEY, GAMALIEL, 1807–59; b. N. J.; studied medicine in Philadelphia, and graduated in 1828; visited China as ship's physician; was editor of the *Methodist Protestant* in Baltimore; with James G. Birney started, in 1836, the *Cincinnati Philanthropist*, an abolition journal. His press was destroyed by a mob, but he continued the paper until 1844. In 1847, he began in Washington the *National Era*, which was mobbed in the next year, but not suppressed. Wanting a story for his paper, Dr. B. inclosed 100 dollars to Harriet Beecher Stowe, asking her to send him something. She sent one of the chapters of *Uncle Tom's Cabin*, without the remotest idea of the stupendous fame it was to achieve. Dr. B. died at sea while on the way to Europe for the benefit of his health.

BAILEY, JACOB WHITMAN, 1811–57; a naturalist, graduate of West Point military academy, and lieut. of artillery; professor of botany, mineralogy, and chemistry in the academy in 1839, winning much distinction for microscopical researches, and publishing a volume of illustrations. He made a collection of 3000 objects, marked and catalogued; and of algæ he gathered 4500 specimens. These, with his books, went to the Boston society of natural history. He was president of the American association for the advancement of science in 1857, in which year he died. His health, never very strong, was broken by exposure while rescuing his wife and daughter from the steamboat *Henry Clay*, burned on the Hudson river five years before.

BAILEY, THEODORUS, b. N. Y., 1805; a naval officer; midshipman in 1818; lieutenant in 1827; commander in 1849; captain in 1855; commodore in 1862; rear-admiral in 1866. He was in the service in the Pacific during the war with Mexico. In the civil war he was in command of the frigate *Colorado*, and led the right column of Farragut's fleet in the opening of the Mississippi and the capture of New Orleans. In 1867, he was placed on the retired list.

BAILEY, or BAILY, NATHANIEL, or NATHAN, d. 1742; an English lexicographer, whose dictionary, published about 1721, was far superior to any then extant, and which formed the basis of Johnson's great work. He was a school teacher at Stepney, and author of several educational works.

BAILLET, ADRIEN, 1649–1706; a French writer and critic. His parents were poor, but he found a friend in the bishop of Beauvais, who educated and advanced him to the priesthood. In 1680, he was librarian to the advocate general of the parliament of Paris, of whose library he made a remarkable catalogue in 35 folio volumes, all written with his own hand. He was an incessant worker, scarcely sparing time for needful rest. He wrote a *History of Holland from 1609 to 1690* (a continuation of Grotius), in 4 vols.; *Lives of the Saints*, *Life of Descartes*, etc.; but his most valuable production is *The Judgment of the Learned on the Principal Works of Authors*, in 9 vols.

BAILMENT (*ante*), the delivery of something of a personal nature by one party to another, to be held according to the purpose or object of the delivery, and to be returned, or delivered over, when that purpose is accomplished. B. may be divided into three kinds: 1. For the benefit of the bailor, or some person whom he represents. 2. For the benefit of the bailee, or some person represented by him. 3. For the benefit of both parties. In the first class, the bailee is required to exercise only slight care, and is responsible only for gross neglect. In the second he must exercise greater care, and is held for slight neglect. In the third he is to exercise ordinary care, and is responsible for a neglect not extraordinary. A person receiving the goods of another to keep without recompense, acting in good faith and keeping them as he would his own, is not answerable for their injury or loss; for, as he derives no benefit, he is responsible only

for bad fault or gross neglect. This responsibility may be more or less by special acceptance, and a spontaneous offer on the part of the bailee may require him to be more careful. But the borrower who receives the entire benefit of the B. must use extraordinary diligence in the care of the property, and may be held for the slightest neglect. It must be used by him only for the purposes for which it was borrowed; he cannot keep it beyond the specified time, nor hold it as a pledge for demands otherwise made against the bailor. In the third class, the benefits are reciprocal, and advantage accrues to both parties; the parties stand upon equal footing, and neither can require more than ordinary care and prudence. In B. the depositary has the right of possession against any but the true owner. A borrower has no property in the thing borrowed, but may protect his possession by action against a wrong-doer. The hire of things for use transfers a special property in them for the use agreed upon; the price paid is the consideration for the use, and the hirer becomes for the time proprietor of the things bailed, having the right to keep them for the time agreed upon. In general, the hire of labor and services is the essence of every species of bailment in which compensation is to be given for care and attention bestowed upon the things bailed. The contracts of warehousemen, carriers, forwarding and commission merchants, factors, and all who receive goods to deliver, carry, forward, sell, or keep, are of this nature, and involve the hiring of services. In a more limited sense, a B. for labor and services is a contract by which materials are delivered to a laborer or artisan to be wrought into some other form. The title remains with the party delivering the goods, and the workman acquires a lien upon them for his services. The owner may reclaim his property after the work is done, but the laborer can hold it until he is paid. Inn-keepers and common carriers are held responsible for goods intrusted to them except against inevitable accident, or against the public enemy. They are in effect insurers. The inn-keeper is responsible for the property of a guest, though it may be lost by theft. The common carrier is responsible in case of loss by fire, unless caused by lightning or tempest.

BAINBRIDGE, WILLIAM, 1774-1833; b. N. J.; a naval officer commissioned lieutenant in the reconstruction of the service in 1798. In that year his vessel was captured by the French, and he and his officers were kept prisoners for more than a year. In 1800, he transported a large sum of money to the dey of Algiers, who compelled him to convey an embassy to Constantinople. In the war against Tripoli he commanded the frigate *Philadelphia* and captured a frigate from the enemy; but his ship got aground, and he and over 300 men were kept prisoners until the close of the war. He was captain in 1806; and commodore in 1812, when he took command of the *Constitution* as his flag ship, and went on a cruise with the *Essex* and *Hornet*. Off San Salvador, Dec. 26, he captured the British frigate *Java*. In 1815, he commanded a fleet of 20 ships intended to move against Algiers, but the impending war was avoided. During his career he was in command in the Mediterranean some half a dozen times, and settled several disputes with the Barbary rulers. For the capture of the *Java* congress gave him a gold medal, and distributed \$50,000 to his men. In later life he was president of the board of naval commissioners.

BAIRAM. See BEIRAM, *ante*.

BAIRD, ABSALOM, b. Penn., 1824; an officer in the union armies during the rebellion, a West Point graduate, captain in 1861, brig.gen. of volunteers in 1862. He was in constant service during the war, accompanied Sherman in the march through Georgia, and was at the surrender of Johnston's army at Durham station. He was brevetted maj.gen. of the regular army, and also of volunteers.

BAIRD, CHARLES WASHINGTON, D.D., b. N. J., 1828; son of Robert; graduated at the university of New York in 1848, and at Union theological seminary in 1851; American chaplain in Rome, 1851-53; pastor of a Reformed Dutch church in Brooklyn, 1859-61; since that time pastor of the Presbyterian church at Rye, N. Y. Dr. B. is the author of a work on Presbyterian liturgies, *A Book of Public Prayer*, a *History of Rye, N. Y.*; and has just completed an extensive and valuable history of the Huguenots, with especial reference to their migration to, and course in, the United States.

BAIRD, ROBERT, D.D., 1798-1863; b. Penn.; a clergyman and author, graduate of Jefferson college in 1818. He passed several years in Europe, laboring especially for temperance and the revival and consolidation of evangelical Protestantism. He was agent and secretary of the American and foreign Christian union. Among his works are *Religion in America*, *A Visit to Northern Europe*, *Protestantism in Italy*, *History of the Albigenes*, *History of Temperance Societies in the United States*, etc.

BAIRD, SPENCER FULLERTON, LL.D., b. Penn., 1823; a naturalist, educated at Dickinson college, where he was professor of natural science. After being for a time assistant secretary of the Smithsonian institution, and became secretary in 1878, on the death of Joseph Henry. His works are a translation of the *Bilder-Atlas* (in which he was assisted by others), published here as the *Iconographic Encyclopædia*; papers on natural history forming part of the *Reports of the Survey of Railroad Routes to the Pacific*, *The Birds of North America*, *The Mammals of North America*, and many papers in the scientific magazines.

BAKALAHARI, one of the Bechuana tribes of Africa, in the Kalahari desert, s. of lake Ngami toward Orange river. They mingle with the Bushmen, and make some attempts at agriculture and traffic.

BAKARGANJ, a district in India between $23^{\circ} 14'$ to $21^{\circ} 48' \text{ n.}$, and $89^{\circ} 55'$ to $91^{\circ} 5'$ e., on the bay of Bengal; 4935 sq.m.; pop. 2,377,423. It is level, with not a single hillock, and full of tidal streams and marshes, but well cultivated. In the s. part are tigers, leopards, and other wild beasts. Of its population, 1,540,965 were Moslems, 827,393 Hindoos, 4049 Buddhists, and 4852 Christians.

BAKER, a co. in central Alabama, on the Coosa; 665 sq.m.; pop. '70, 6194—137 colored. Productions, corn, wheat, oats, cotton, and sweet potatoes. Intersected by two railroads. Co. seat, Grantville.

BAKER, a co. in n.e. Florida, on St. Mary's river; 570 sq.m.; pop. '70, 1325—60 colored. Products, corn, sweet potatoes, sugar, and molasses. In the n. part is a portion of the Okefenoke swamp. Co. seat, Sanderson.

BAKER, a co. in s.w. Georgia, on Flint river, 1400 sq.m.; pop. '70, 6843—955 colored. It has fertile soil, producing chiefly corn and cotton. Co. seat, Newton.

BAKER, a co. in s.e. Oregon, bordering on Nevada and Idaho; about 6000 sq.m.; pop. '70, 2804—680 Chinese. It has gold and silver mines, and produces wheat, barley, etc. Co. seat, Auburn.

BAKER, EDWARD DICKINSON, b. England, 1811; killed in the battle of Ball's Bluff, Va., 1861. He came to this country when a child; studied and practiced law; was a member of the Illinois legislature, and in 1844 member of congress from that state; resigned, and volunteered in the Mexican war; commanded a brigade at the battle of Cerro Gordo; after the war, was again chosen congressman, but resigned, and in 1852 settled in California. Thence he went to Oregon, and was United States senator from that state. When the rebellion began, he raised a regiment in New York and neighborhood, was offered a commission as brig.gen. but declined it, and fell at the head of his favorite troops.

BAKER, OSMON CLEANDER, D.D., 1812—71; b. N. H.; a clergyman; educated at Wesleyan university; began his pastorate in 1844; in 1847 occupied the chair of theology in the Methodist Biblical institute at Concord, N. H.; was afterwards president of the institution until 1852, when he was chosen bishop of the Methodist Episcopal church. He is author of a work on ecclesiastical law and polity of the church.

BAKER, WILLIAM MUMFORD, b. 1825; a graduate of Princeton. He has written the life of his father, Daniel B.; *Inside, a Chronicle of Secession*; *The New Timothy*; *The Virginians in Texas*, etc. He has been a Presbyterian pastor in Texas and Ohio, and is now a pastor in Boston, Mass.

BALBI, GIOVANNI DE JANUA, or **JANUENSIS**, a Dominican friar of the 13th century. He wrote a cyclopædia which became one of the first of printed books, done at Metz by Faust and Schaeffer, in 1460, and several times re-printed before 1520. Its full title is *Summa Grammaticalis Valde Notabilis quæ Catholicum Nominatur*.

BALBUENA, BERNARDO DE, 1598—1627; a Spanish poet and priest, educated in Mexico, and bishop of Porto Rico. His chief works are *The Age of Gold*, a pastoral romance; and *El Bernardo*, an epic poem.

BALBUS, LUCIUS CORNELIUS (MAJOR), b. Spain; made a Roman consul, and accompanied Cæsar to Spain, 61 B.C.; managed Cæsar's private property while the owner was in the campaign in Gaul. Octavius made him a consul, the first adopted citizen who held that office. He wrote a diary of his life, and by will left 20 denarii (nearly \$3 present value) to every Roman citizen.

BALBUS, LUCIUS CORNELIUS (MINOR), nephew of B. major; appointed pontiff (a high priest of the pagan religion) by Cæsar. He was quester in Spain, but used his office for fraud and oppression; fled to Africa, where he became pro-consul; gained a victory, and was honored with a triumph in Rome—the first bestowed on an adopted citizen.

BALDE, JAKOB, a Latin poet, 1603—68, a native of Alsace. He was a Jesuit, and for a time court preacher and professor of rhetoric at Munich. He was especially successful as an imitator of Horace.

BALD (or WHITE-HEADED) EAGLE, *Haliaeetus leucocephalus*, so named because the white smooth feathers of the head make it appear as if naked; a native of North America, found near the sea-coast and in mountain chains; sometimes more than three feet long, with wings spreading seven or eight feet. The female lays two or more eggs in Jan., which are hatched the next month. She uses the same nest, usually in a high tree, year after year, and will stoutly defend her young. The B. E. is omnivorous, but especially fond of fish, which it catches, but oftener steals from smaller fishing birds. This is the bird that figures upon coins and flags as the emblem of the American union.

BALDI, BERNARDINO, 1533—1617; an Italian mathematician and author. He was master of more than a dozen languages, and wrote upwards of 100 different works. He

was an abbot for 25 years, and on one occasion was envoy to Venice. B. had great reputation as theologian, mathematician, geographer, antiquarian, historian, and poet.

BALDPATE, or AMERICAN WIDGEON, *Marcca Americana*, a duck much prized by epicures, found chiefly in the s.w. states, on the w. coast, and about the great lakes. It is named from its white-tipped head; and is marked with brown, chestnut, gray, or white.

BALDWIN, a co. in s. Alabama, on Perdido river, the gulf, and Mobile bay; intersected by the Mobile and Montgomery railroad; 1500 sq.m.; pop. '70, 6004—2345 colored. The surface is level and sandy, but supports a fine growth of pine timber. Co. seat, Blakely.

BALDWIN, a co. in central Georgia, on the Oconee river; 257 sq.m.; pop. '70, 10,618—6774 colored. It produces corn, cotton, wheat, and sweet potatoes. Co. seat, Milledgeville.

BALDWIN, name of counts of Flanders, from the 9th to the 12th century. Baldwin I. was son-in-law of Charles the bald of France; Baldwin V. was son-in-law of Robert of France; Baldwin IX. became Baldwin I., emperor of Constantinople.

BALDWIN, JOHN DENISON, b. Conn., 1809; a journalist; educated by his own exertion, and licensed to preach in 1833. He wrote for magazines on archæology and kindred themes; became editor of the *Charter Oak*, a Hartford newspaper; afterwards of the *Boston Commonwealth*, and, still later, of the *Worcester Spy*. He has been three times chosen member of congress. In 1847, he published a volume of poems; in 1859, *Prehistoric Nations*; and in 1872, *Ancient America*.

BALDWIN, MATTHIAS W., 1796—1861; b. N. J.; a machinist; recorded as the builder of the first railway locomotive in this country; he subsequently built locomotives on an extensive scale in Philadelphia.

BALDWIN, THERON, D.D., 1801—70; b. Conn.; graduated at Yale; was home missionary of the Congregationalists in 1829; one of the founders of Illinois college; organizer of the Monticello female seminary, of which he was principal, 1838—43; and 27 years secretary of the society for promoting collegiate and theological education, in whose service his work was of great value. In his latter years he resided at Orange, N. J.

BALÉCHOU, JEAN JACQUES NICOLAS, 1715—65; a French engraver, whose best work is a full-length portrait of Augustus III. of Poland. He also made some fine plates after Claude, Vernet, and Vanloo.

BALEN, or BALLEEN, HENDRIK VAN, 1560—32; a painter of Antwerp, pupil of Adam von Oort, the teacher of Rubens. He finished his studies in Italy, and became instructor of Vandyke and Snyders. Some of his altar pieces are in the Antwerp cathedral.

BALESTRA, ANTONIO, an Italian painter, 1666—1740. He was one of the last great representatives of the Venetian school, and a member of the academy of St. Luke, in Rome, which gave him a prize for his "Defeat of the Giants."

BALFOUR, ROBERT, b. about 1550; a Scotchman, who was for many years principal of the Guienne college, at Bordeaux; author of a *Commentary on the Logic and Ethics of Aristotle*. B. was one of the scholars of the middle ages who helped to spread over Europe the literary fame of Scottish writers.

BALFOUR, WALTER, b. Scotland, 1776; d. Mass., 1852; educated in the Scottish church, but became a Baptist; and finally a Universalist, advocating with great ardor and success the doctrines of that sect.

BALGUY, JOHN, 1686—1748; an English theologian and philosopher, graduated at Cambridge, and ordained in 1710. B. was early in the warm religious controversies of the time, taking the side of Hadley against the high-church writers. In 1728, Hadley made him prebend of Salisbury, and the next year he became vicar of Northallerton. His chief works are, *Letters to a Deist*, *Foundation of Moral Goodness*, *Inquiry Concerning Virtue*, *Divine Rectitude*, *The Law of Truth*, and *Essay on Redemption*.

BALIOL COLLEGE. See BALLIOL COLLEGE, *ante*.

BALIZE (from *balise*, "a beacon"), a village near the mouth of the Mississippi, inhabited chiefly by pilots. Reporting a vessel "at the Balize" means that she is at, or has passed, the mouth of the river.

BALL, GAME OF. See BASE BALL.

BALL, THOMAS, b. Mass., 1819. A sculptor. Among his works are statues and busts of Washington, Webster, Everett, Choate, etc.

BALLANCHE, PIERRE SIMON, 1776—1847; a French theocratic philosopher, author of *Du sentiment considéré dans la littérature et dans les Arts*, *Antigone* (a prose poem), *Essai sur les Institutions Sociales dans leur Rapport avec les Idées nouvelles*, *Le Vieillard et le Jeune Homme*, *L'Homme sans Nom* (a novel), *Palingénésie Sociale*, *Vision d'Hébal*, etc. The *Palingénésie*, which he did not finish, was to be an exposition of the workings of God in history, and is considered his greatest work. B. became a member of the academy, and is represented as a warm-hearted, amiable man, whose intellect was overshadowed by his imagination.

BALLARD, a co. in w. Kentucky, on the Mississippi and Ohio rivers; 500 sq. m.; pop. '70, 12,576—1471 colored. Productions—tobacco, wheat, corn, and oats. Co. seat, Blandville.

BALLOU, HOSEA, 1771—1852; b. N. H.; minister of the Universalist denomination; son of a Baptist minister. He was self-educated; was expelled from his father's church on declaring his belief in the final salvation of all men; began to preach at 21 years of age, and became minister of the Second Universalist church in Boston, in which he preached 35 years. He started the *Universalist Magazine* in 1819, and in 1831, with his grand-nephew, began the *Universalist Expositor*, a quarterly publication. It is said that he preached over 10,000 sermons, none of which were written before delivery. His brothers, David and Benjamin, were also preachers of the same faith.

BALLOU, HOSEA, 2d, D.D.; 1796—1861; b. Vt.; the grand-nephew of Hosea of Boston; was pastor in Connecticut and Massachusetts, and in 1853 president of Tufts college. He was one of the editors of the *Universalist Magazine*, now published under the name of *The Trumpet*. He was the author of *Ancient History of Universalism*, etc.

BALLOU, MATURIN MURRAY, son of Hosea of Boston; b. Boston, 1822; editor of several literary journals, author of a biography of his father, *History of Cuba*, and compiler of the *Treasury of Thought*. He is one of the editors of the *Boston Globe*.

BALL'S BLUFF, on the Potomac, 33 m. above Washington, the scene of a defeat of the union forces under col. E. D. Baker, in the first year of the rebellion, Oct. 21, 1861. The conflict was severe, and the union troops, from 1500 to 1700 in number, were utterly defeated, their loss exceeding 1000 men; the confederate loss was reported to be 155. Baker was blamed for rashness, and gen. Stone was imprisoned, but afterwards released and given a command.

BALLSTON SPA, seat of justice of Saratoga co., N. Y.; 7 m. w. of Saratoga springs; once much frequented as a watering place, but long since over-shadowed by its neighbor. Pop. '70, 2970.

BALMEZ, JAIME LUCIEN, 1810—48; a Spanish ecclesiastic, philosopher, and author. His most important work is *Protestantism Compared with Catholicism in their Relation to European Civilization*, a very able defense of the Roman church. He wrote also *Fundamental Philosophy*, and a *Course of Elemental Philosophy*.

BALTARD, LOUIS PIERRE, 1765—1846; a French architect and engraver. He is known chiefly by his skill in engraving, specimens of which are found in *Paris and its Monuments*, Denon's *Egypt*, and illustrations of Napoleon's wars in *La Colonne de la grande Armée*. His son VICTOR, b. 1805, was architect for the French government and the city of Paris, and a member of the academy of fine arts. He built St. Augustine's church and other fine edifices.

BALTIC, a village in New London co., Conn., 42 m. e.s.e. of Hartford. It has one of the largest cotton manufactories yet built, running about 60,000 spindles.

BALTIC QUESTION, the controversy between the provinces of Esthonia, Livonia, and Courland, and the government of Russia. Peter the great promised to the provinces their own German administration, and freedom of conscience; and these rights were confirmed in 1853, but in spite thereof, the Greek church endeavors to proselyte the people, efforts are made to compel the substitution of the Russian for the German tongue in schools, and the press has been subjected to censorship.

BALTIMORE, a co. in n. Maryland, on Chesapeake bay. 700 sq. m.; pop. '70, 330, 741—47,931 colored. The surface is somewhat hilly. It produces corn, tobacco, wheat, and garden vegetables. Co. seat, Towsontown.

BALTIMORE (*ante*), the chief city in Maryland. The colonial assembly in 1729 passed a bill for laying out a town in Baltimore co., on the n. side of the Patapsco. The earliest patent for land there was by Charles Gorsuch, a quaker, who received 50 acres on Whetstone Point, in 1662. Twenty years later David Jones settled on the n. side of the harbor, giving his name to the stream known as "Jones's Falls," which divides the "old" from the "new" towns. In Jan., 1730, a small town was located n. of Jones' Falls, and named B., in honor of Calverly, lord B. At the same period William Fell, a ship-builder, settled at Fell's point, and two years later another town was projected and named after David Jones. That town was joined to B. in 1745, dropping its name. By successive unions these little settlements passed into B., and in 1752 the future city had about two dozen houses and 200 inhabitants. In 1756, a number of the people expelled from Nova Scotia came to B.; in 1767 B. was made the county seat, and the usual courts were established, a court-house being built on the site of the present battle monument, standing, with its antiquated whipping-post near by, until 1808. The first newspaper was begun in 1773, a theater was built, and a stage line to Philadelphia and New York established. When the revolution came, B. had about 570 houses, and nearly 6000 inhabitants. In 1776, the continental or provincial congress, fearing British interference at Philadelphia, met in B. in quarters thus described by John Adams: "The congress sit in the last house at the w. end of Market street, on the s. side of the street, in a log chamber, with two fire-places, two large closets, and two doors. The house belongs to a quaker, who built it for a tavern." A custom-house was opened in 1780, and a market

in 1784, in which year a few oil lamps were set in the main streets, and watchmen were employed. Trade and commerce began soon after peace, and the city grew rapidly. Though originally a Roman Catholic colony, there came, after the revolution, a number of enterprising Scotch-Irish Protestants, whose energy and means were of great value to the city. Stage lines and packets were established to distant places, turnpikes projected, and in 1789 the course of Jones' Falls within the city was changed, and the original bed of the stream filled in. In 1792, there was an accession to the population of many refugees from San Domingo. By 1796, the inhabitants numbered 20,000, and B. was made a city and chose a mayor. During the last war with Great Britain, a force under col. Ross advanced against B., Sept. 12, 1814, and a sharp conflict ensued, in which the English colonel was slain; but the Americans were defeated with heavy loss. Still the projected assault on the city was abandoned. The entrance to the port of B. is defended by fort McHenry, on the point of land between the harbor and the Patapsco. It was during an unsuccessful bombardment of this fort by the British fleet, in 1814, that Francis Scott Key, an American prisoner on one of the English ships, composed the celebrated "Star-Spangled Banner." The city became conspicuous early in the civil war. April 19, 1861, a portion of the 6th Massachusetts and 7th Pennsylvania regiments was mobbed while passing through the city, and in the contest, nine citizens and two soldiers were killed, and three citizens and 23 soldiers wounded. No more troops were sent through B. until the city was put under military rule.

B. is on undulating ground, covering about 10,000 acres, $4\frac{1}{2}$ m. from e. to w., and $3\frac{1}{2}$ from n. to south. It is almost equally divided by Jones' Falls, which is crossed by several bridges. The region e. of the stream is nominally divided into two parts, Old Town and Fell's Point. The Point is the resort of seamen, and a place of ship-building and manufacturing. On the w. of Jones' Falls are the city proper and Spring Garden, the former being the center of trade and the home of the wealthiest citizens: the latter inhabited by the poorer classes and once noted for rowdyism; "My name is Jake Keyser; I was born in Spring Garden," is a song not yet forgotten.

B. has more than 200 churches, three universities, a number of colleges, and many charitable and beneficial institutions, among which are the Bay View asylum; the Spring Grove asylum; the Maryland institution for the blind; the Sheppard asylum for the insane, endowed with \$1,000,000 by Moses Sheppard; the Peabody institution, which received over \$1,000,000 from George Peabody; the Hopkins hospital, endowed with \$2,000,000 by John Hopkins, free without regard to color or condition. The Johns Hopkins university (which sec) is a new institution, magnificently endowed, giving opportunity for post-graduate study, and advanced scientific research, and gradually developing its various courses of study on a far-reaching plan. There are about 125 public schools, with 80,000 average attendance. The most notable building in B. is the new city hall, occupying an entire square of more than half an acre; 355 ft. long, in renaissance style; the outer facing of the walls, the portico, and all the ornamental work of white Maryland marble; the inner walls and floors of brick; four stories high, surmounted by a mansard roof of iron and slate, with a dome and tower of iron, rising 240 ft. from a marble base. The interior is very elegantly furnished, and the whole cost was \$2,600,000. It is said to have been built entirely within the original estimate of expense. The Peabody institute was incorporated in 1857; one wing of the building, near the Washington monument, is completed. It is faced and ornamented with white marble, and is simple, but massive and imposing in style. It contains a library of 56,000 volumes, and halls for lectures, concerts, etc. The custom-house is a fine edifice, 225 by 141 ft.; the principal room is 53 ft. square, and is lighted by a glass dome, 115 ft. above the street. On the four sides are colonnades, each column being a single block of Italian marble.

B. is supplied with water from lake Roland (fed by Jones' Falls), an artificial pond 8 m. n. of the city, with a capacity of 500,000,000 galls. There are three other reservoirs, with an aggregate storage of as much more. There are also numerous small springs and fountains in the city. Of a number of public squares, Druid Hill park, of 700 acres, in the extreme n.w. of the city, is the chief, and possesses wonderful natural beauty, including forests, lakes, lawns, and about 25 m. of carriage drives.

As a manufacturing city, B. takes high rank in ship-building; in products of iron, wool, copper, cotton, and pottery; in sugar-refining, distilling, tanning, saddlery, the making of agricultural implements, etc. Near the city is clay for bricks, which is not excelled by any known in the world, and more than 100,000,000 B. bricks are made and sold annually. The largest iron-rolling mills in the United States are the Abbott works, in the e. section of the city. As a flour market, B. is an important center; and it is also prominent in exporting tobacco, and other products. One of its features is the oyster trade. The oysters are taken from Chesapeake bay in immense quantities, canned, and shipped to all parts of the world.

In order of population, B. is the sixth city in the United States. Its progress as shown by the census has been rapid. 1790, 13,503; 1800, 26,514; 1810, 35,583; 1820, 62,738; 1830, 80,625; 1840, 102,313; 1850, 169,054; 1860, 212,418; 1870, 267,354.

BALTIMORE, LORD, Sir GEORGE CALVERT, of the Irish peerage created in 1624 by James II., who gave the title to his zealous Roman Catholic defender. Lord B. was

of English birth, a graduate of Oxford, principal secretary of state in 1619, and member of parliament in 1620-21. He tried to establish a colony in Newfoundland, in 1625, but failed. He visited Virginia, but not being well received, returned to England, where he died. It was to his son, Cecil Calvert, that the Maryland patent issued in 1632. He never came to this country, but sent settlers under his brother Leonard. Cecil succeeded to the title, whence it passed to John and his heirs until 1771, when it died with Frederick, who had no children.

BALTZER, WILHELM EDUARD, b. 1814; studied at Leipsic and Halle; was hospital chaplain at Delitzsch, and in 1847 founded, at Nordhausen, a free religious community. In 1848, he was chosen to the Frankfort parliament, and subsequently to the Prussian assembly. In 1868, he established a society and a journal to promote vegetarianism. He has written many works on religious topics, including a *Life of Jesus*.

BALUCHISTAN'. See BELOOCHISTAN, *ante*.

BALUZE, ÉTIENNE, 1630-1718; a French scholar; librarian for Colbert, the famous minister of state; in 1670, honored with the professorship of canon law in the royal college, the chair being founded expressly for him. On the fall of cardinal de Bouillon he lost his place, and was long kept out of Paris. His best known work is the *Capitularia Regum Francorum*.

BAMBA, a province in Congo on the w. coast of Africa, s. of the river Ambriz; abounding in gold, silver, copper, and salt. It is said to be fertile, and densely populated. The climate is good for that part of the continent.

BANANAL', also called Santa Anna, an island 200 m. long by 35 wide, in the Araguay river, Brazil; exceedingly productive of bananas, whence the name.

BANCROFT, AARON, D.D., 1755-1839; b. Mass. He graduated at Harvard, and settled at Worcester, in 1785. He published, besides many sermons, an eulogy and a life of Washington, the latter reprinted in England. He was a strong opponent of Calvinism, before the Unitarians were known. Later in life he was president of the Unitarian association.

BANCROFT, EDWARD, 1744-1821; b. Mass.; practiced medicine in British Guiana, and resided several years in England. He was intimate with Franklin and Priestley. Among his works are *Essay on the Natural History of Guiana*, *Charles Wentworth*, a novel, and *Experimental Researches concerning Permanent Colors*.

BANDARRA, GONZALO ANNES, d. 1556; called the "Portuguese Nostradamus." He was a shoemaker, composed religious verses, and pretended to give prophecies. Several works purporting to be his were issued, but probably all were written by others. Their burden was the resurrection and restoration of John IV., or of Sebastian, kings of Portugal.

BANDERA, a co. in s.w. Texas, on the Medina; 938 sq.m.: pop. 70,649-18 colored. It is a stock-raising region. Co. seat, Bandera City.

BANDETTINI, TERESA, 1763-1837; an Italian poetess, who gained celebrity as an improvisatrice. She was much honored, not only for talent, but for virtues and accomplishments. Among her works are *Rime diverse*, *Da Morte d'Adone*, and *Il Polidoro*. She wedded Signor Pietro Landucci, a gentleman of Lucca.

BANER, JONAN, 1595-1641; a Swedish general under Gustavus Adolphus in the 30 years' war, commanding the right wing in the battle of Leipsic and defeating Pappenheim. After the death of Gustavus the regent Oxenstiern made B. chief of the army. He was victorious at Wittstock and at Chemnitz and overran all Germany, where he was accused of unnecessary harshness. He failed in an attempt in 1641 to capture the emperor at Ratisbon and died soon afterwards. He had few equals in reckless gallantry.

BANGOR (*ante*), one of the most important cities in Maine. Fort Norumbega was built here, in 1656, by the French; and it was thought that a great city of that name existed (alluded to by Milton in *Paradise Lost*, in Burton's *Anatomy of Melancholy*, and by other authors). In 1769, the settlement, now under English rule, was called Kenduskeag. Finally, it got its present name from the well-known psalm tune, which was a great favorite with its minister, Seth Noble. It was incorporated as a city in 1834, since which time it has grown to nearly 30,000 in population. A navigable river, railroads, and abundant water-power combine to make B. a great manufacturing city. It is the seat of justice of Penobscot co., and a port of entry, with a capacious, safe, and easily accessible harbor. The city is on both sides of the Kenduskeag, over which there are several bridges; and over the Penobscot there is a bridge a quarter of a mile long, connecting the city with the suburb of Brewer. B. is one of the greatest lumber marts in the union, employing more than 2000 vessels in the business. It is the seat of a Congregational theological seminary.

BANGS, NATHAN, D.D., 1778-1862; b. Conn.; a Methodist minister, commencing as an itinerant in 1801. He labored seven years in Canada, and came to New York in 1810. In 1820, he was chosen agent of the Methodist book concern; in 1828, chosen editor of the *Christian Advocate and Journal*, and in 1829 elected bishop of Canada, but declined. In 1832, he was editor of the *Methodist Magazine and Quarterly Review*; in 1863, secretary

of the church's missionary society; in 1841, president of the Wesleyan university, but soon afterwards returned to pastoral work in New York. Dr. B. was the author of *Predestination Examined*, *Reformer Reformed*, *Life of Arminius*, *History of Missions*, *History of the Methodist Episcopal Church*, etc.

DANISTER. See HALIFAX COURT HOUSE.

BANK—BANKING (*ante*). The main principles of banking in the United States agree generally with those in other business countries, with such exceptions as are involved in the present system of national banks. Indeed, the modern English system of B. originated in the United States, while they were English colonies. As early as 1690 the colony of Massachusetts issued bills of credit to a considerable amount, making the paper legal tender for taxes and other debts, the notes being payable to bearer on demand. This was two years before the establishment of the B. of England (opened Jan. 1, 1695), and William Patterson, the father of that remarkable fiscal agency, had been in the colonies, and took especial interest in the Massachusetts experiment. In the exigencies of the campaign against the French in Nova Scotia, in 1745, Massachusetts again issued paper currency; and when England paid nearly \$200,000 for the cost of that expedition, the colony redeemed her paper at the rate of \$11 currency for \$1 of silver. Other colonies issued legal tender, and about the time of this redemption the paper of some of them was rated per dollar par, as follows: New England provinces, 11 for 1; North Carolina, 10 for 1; South Carolina, 7 for 1; New York, 2 for 1; Pennsylvania, 1.80 for 1. In 1712, South Carolina set up a bank, and issued nearly \$250,000 in bills, to be retired at the rate of one twelfth annually until all were redeemed. This provision increased their value in the first year or two about 100 per cent. In 1723, Pennsylvania began by an issue of \$75,000, and half a century later doubled the amount. In 1739, Massachusetts established a regular bank which issued bills of credit.

The revolution had to be provided for by extraordinary means; in May, 1775, the continental congress authorized the issue of bills to the amount of \$3,000,000, making them legal tender. Within two years this currency began rapidly to depreciate, under constantly increasing issues, which, in 1779, had reached \$160,000,000. Congress then directed the issue of an additional \$40,000,000, and declared that to be the final extent. Though this promise was kept, the depreciation continued, and by 1781 continental currency was good for nothing as money. Some years after the foundation of the present national government, the old currency was redeemed, at the rate of about 100 to 1. On the last day of the year 1781, congress chartered the bank of North America in Philadelphia, and both Pennsylvania and New York also granted charters to the same concern the next year, though it did not go into operation for nearly two years. The bank of New York was chartered in 1784, and the bank of Massachusetts, at Boston, in the same year. But these institutions were unable to supply the currency required, and other states began to issue bills of credit, or to charter banks, and in some, personal property of certain kinds was made legal tender for ordinary debts. But all further issues by states, as such, were forbidden by the federal constitution, which went into operation in Mar., 1789. Then, among the early movements in congress, came a charter for a bank of the United States, which was carried after a long contest. The charter ran 20 years from Feb. 25, 1794; capital, \$8,000,000, of which the United States government took \$2,000,000, thereby having a share of the directors; and its bills were made good for the liquidation of all debts to the government. When the time came for renewing the charter, the country was at war with England; there were nearly 90 state banks to oppose the rechartering, and the effort failed. The old bank failing also to get a state charter, immediately wound up its affairs. It had been successful and had paid 8 to 10 per cent a year to its stockholders. State banks increased, and in 1813 there were 150 of them, with circulating notes amounting to \$63,000,000. In 1814, the New England banks suspended specie payments, but resumed at the beginning of 1817. Meantime, state bank notes were depreciating. In 1814, those of Baltimore were down 20 per cent, and those of New York, 10 per cent. The news of peace raised their value 5 and 10 per cent; but they were subject to sudden fluctuations; the federal government had no control over the states, and the states had little over the bankers. The old "regulator" was seriously missed, and, April 3, 1816, congress chartered the second United States bank at Philadelphia, with power to establish branches. Its capital was \$35,000,000, of which the federal government took \$7,000,000; the bank with its branches was made the official depository of government money; its bills were legal tenders, and it was the agent for negotiating federal and state loans. This compelled the state banks to resume specie payments, and business again moved forward steadily. State banks, however, grew in number rapidly. In 1816, there were 246, with \$90,000,000 capital. In 1830, when the rechartering of the United States bank was proposed, there were 330 state banks, with \$145,000,000 capital. President Jackson in his message, Dec., 1829, expressed his opposition to the United States bank, and his expected veto of the bill to renew the charter came in July, 1832. The next move was to remove the deposits of public money from the bank. This could be done only by order of the secretary of the treasury, and as that officer refused to conform to the president's wishes, he was summarily removed, and a more tractable man was appointed in his place. The old bank, that had more than once saved the credit of the nation, was crippled, and went down. In the wind-up it

was found that its whole capital was lost, though it managed to pay its debts. Its last operations were under a charter from the state of Pennsylvania.

The refusal to continue the national bank gave full scope to state institutions, and they grew with mushroom rapidity. In 1837, there were 634 of them, with a capital of \$291,000,000, \$149,000,000 in circulating notes, \$127,000,000 in deposits, and \$525,000,000 in loans and discounts. The crash surely impending was hastened by an enormous crop of cotton in 1836, a consequent decline in prices, and the depreciation of the credit of cotton dealers and their backers. The tumble began in 1837, and by the 1st of June there was an entire suspension of specie payments; values fell from dollars to shillings, all business was deranged, millions of people were reduced from comparative ease to sharp poverty, and a period of wretchedness began which continued nearly five years. However, congress passed a general bankruptcy law, the states assisted, by limitation and other laws, and by 1843-44 the country had nearly recovered. The banks had many trials; some resumed, only to suspend again, and many went into liquidation. Congress passed the independent treasury law, and thereafter the federal government had no direct concern in banking until the rebellion broke out. The old United States bank had its final downfall in the crash of 1837. That crisis taught wisdom to the state banks, and a general retrenchment was the consequence. Between 1838 and 1842, the number of banks was reduced from 675 to 577; capital from \$317,000,000 to \$229,000,000; circulation from \$116,000,000 to \$59,000,000; and discounts from \$486,000,000 to \$254,000,000. Further security was demanded by the public, and among the new measures were the Suffolk bank plan in Massachusetts, and the New York safety-fund system. The Suffolk bank plan was merely an arrangement whereby that bank was made the channel through which all notes of New England banks that found their way to Boston, as most of them naturally did, were at once forwarded to the issuers for redemption. The result was that all solid bankers found it for their interest to deposit with the Suffolk a redemption fund, as that insured the acceptance of their notes.

The New York safety-fund system, which is the cardinal principle of the present national banking plan, required each bank to deposit, with the banking department of the state, securities consisting of federal or state stocks, or bonds and mortgages, which, in case of the failure of the bank, were sold, and the proceeds applied to the liquidation of its debts. In 1857, there was another crash, followed by a general suspension of specie payments; but the depression did not long continue.

Some of the serious evils, avoided to a great extent by the issue of greenbacks and national bank currency, were counterfeited or altered bills. When almost every bank had its own plates for six or more denominations of notes, the land was full of counterfeits and alterations, and no business man ventured to accept a bank-note not well known to him, without previous comparison with a detector. In 1862, there were counterfeits on the notes of 253 banks, besides 1861 bills imitated, and 1685 entirely spurious notes. On the best notes there was a discount in the business centers of from 1 to 10 or even 15 per cent; and exchange was more variable than the weather. The "wild-cat" and "red-dog" banks of Michigan, and other western states, were notoriously unsafe. A dozen of them would club together to make a show for one only, when the examiner came along, and the same specie would be an hour in advance of him all along his route. The "red-dog" bank was so-called because of its movable nature, and of the color stamped on its notes. Established in one place on Monday, the "banker" might pack his carpet-bag at night, and on Tuesday open his bank 50 miles away; in which case he stamped in red ink on the face of his notes the name of the place in which the "banking-house" was last established.

The war of the rebellion made large issues of credit necessary, and among the earliest financial measures was a tax on banking, with certain inducements intended to float government loans by means of banks, and the establishment of the national banking system. The measures were successful, and the state institutions rapidly came into the new system, so that in the beginning of 1866 nearly 1600 of them had become nationalized. When the war began in 1861, the paper in circulation in the country was \$200,000,000, of which about three fourths was the issue of loyal states. The specie available for circulation was estimated at \$275,000,000. The government soon borrowed from the associated banks in the large cities \$50,000,000, for which demand notes were issued, that were not at the time legal tender. In Feb., 1862, congress authorized the issue of \$150,000,000 in notes, of which \$50,000,000 was for the withdrawal of the demand notes. The last issue was legal tender, except for duties on imports and interest on the public debt. The banking law of Feb. 25, 1863, still in force, created a currency bureau in the treasury department, at the head of which is the comptroller of the currency, who has power to authorize banking by associations of not less than five persons, and a minimum capital (unless in very small places), of \$100,000, one half to be paid at once, and the remainder in six months. Before commencing business, the association must transfer to the treasury of the United States interest-bearing bonds of the national government to the amount of one third the capital; whereupon they may receive circulating notes, registered and countersigned, equal to 40 per cent of the market value of the stocks deposited, but not beyond the amount of their par value. The entire amount of currency to be issued is limited to \$300,000,000, one half to be apportioned among the states according to their representative population, and the other

half with regard to the existing banking capital, resources, and business of the several states. Nearly all the states conformed to this national system, withdrew their old notes, and took new ones from the treasury. The currency then came to consist of the notes of these banks, and the treasury demand notes, or "greenbacks," the whole amounting in 1865 to nearly \$450,000,000. The national notes are quite as good as the demand notes, and circulate as freely, their final payment being assured by deposits in the treasury department.

Of course this flood of paper soon drove specie out of circulation, and little was seen of gold and silver, except at the custom houses and sub-treasuries, until the general resumption, Jan. 1. 1879. In the meantime there came another financial crisis, in the autumn of 1873, precipitated by the failure of the important house of Jay Cooke & Co.; but there were no specie payments to be suspended, and the holders of national bank notes were amply protected by the treasury deposits. Still there was great financial distress for five years, gradually relaxing in 1878-79, with recovery fully established towards the close of the latter year.

Of the national banking system, it may be said that the rebellion presented to congress as its first duty the invention of some plan for repressing the heterogeneous system of banking, providing one system of a homogeneous and absolutely safe character; one which would be truly national, operating alike in every part of the United States. The necessities of the government inspired the new order, but the old was rapidly failing to meet the wants of the people; the new, therefore, may be said to have grown out of the necessities of business as well as the straits of the nation. The new system preserved all the advantages of the old, and added many new ones. It gave absolute protection to the holders of the national bank-notes, as government bonds were deposited with the U. S. treasurer in ten per cent excess of their issue for the security of their redemption. It provided security of a uniform and almost absolute character for the deposits, making the stockholder liable, in an equal amount of his stock interest, for the ultimate payment of the deposits. It provided for a uniform bank-note of equal value in every part of the country, so engraved and issued, that security against counterfeits was far better attained than ever before. It provided for a system of redemption which made exchange merely nominal, and gave to national bank-notes, issued in most distant places, a uniform value in all the great financial centers of the country. It provided a system of published reports over the sworn signatures of the executive officers of the banks, and a uniform system of examination under the direction of the comptroller of the currency.

The national banks are required to pay to the revenues of the general government as follows: 1. One half of one per cent, semi-annually, on the circulation allowed by law. 2. One quarter of one per cent, semi-annually, on the average deposits for the half year. 3. One quarter of one per cent, semi-annually, on capital not in government bonds. Their stockholders are subject to local taxation on the market value of their stock as personal property. Each bank must keep with the treasurer of the United States, in legal tender notes, for the redemption of its bills, five per cent of the amount of its circulation; and must retain constantly in its own vaults two fifths of fifteen per cent of its deposits.

The distribution and extent of banks and banking in the United States is shown in the following table prepared by the comptroller of the currency:

NATIONAL BANK CIRCULATION AUTHORIZED AND ISSUED.

Statement showing by geographical divisions the amount of CIRCULATING NOTES to which the National Banks in operation on June 14, 1879, WERE ENTITLED, and also the amount of notes which had been ACTUALLY issued to them.

GEOGRAPHICAL DIVISIONS.	Associations having Capital not exceed- ing \$500,000 each.		Associations having Capital exceeding \$500,000, but not ex- ceeding \$1,000,000 each.		Associations having Capital exceeding \$1,000,000, but not exceeding \$3,000,000 each.	
	Capital.	Authorized Circulation 90 per cent.	Capital.	Authorized Circulation 80 per cent.	Capital.	Authorized Circulation 75 per cent.
Eastern states.....	\$95,273,270	\$85,745,943	\$44,275,000	\$35,420,000	\$24,879,650	\$18,659,737
Middle states.....	102,418,235	92,176,411	28,872,560	23,098,048	25,720,700	19,290,525
Southern states.....	28,051,800	25,246,620	2,350,000	1,880,000	.....	.....
Western states.....	71,183,200	64,064,880	9,700,000	7,760,000	2,450,000	1,837,500
Pacific states and territories..	4,120,000	3,708,000	750,000	600,000	2,000,000	1,500,000
Totals.....	\$301,046,505	\$270,941,854	\$85,947,560	\$68,758,048	\$55,050,350	\$41,287,762

GEOGRAPHICAL DIVISIONS.	Associations having Capital exceeding \$3,000,000 each.		Total Capital and Authorized Circulation.		Circulation actu- ally issued to the Banks.	Cir- culation not called for by the Banks.
	Capital.	Authorized Circulation 60 per cent.	Capital.	Authorized Circula- tion.		
Eastern states.....			\$164,427,920	\$139,825,680	\$117,625,727	\$22,199,953
Middle states.....	\$13,200,000	\$7,920,000	170,211,495	142,484,984	113,995,559	28,489,425
Southern states.....			30,401,800	27,126,620	23,579,268	3,547,352
Western states.....			83,333,200	73,662,380	57,276,342	16,386,038
Pacific states and territories..			6,870,000	5,808,900	3,218,780	2,589,220
Totals.....	\$13,200,000	\$7,920,000	\$455,244,415	\$388,907,664	\$315,695,676	\$73,211,988

TABLES OF BANKING CAPITAL AND DEPOSITS.

GEOGRAPHICAL DIVISIONS. May 31st, 1878.	State Banks and Trust Companies.			Private Bankers			Savings-Banks with Capital.			Savings- Banks with- out Capital	
	No.	Cap- ital.	De- posits.	No.	Cap- ital.	De- posits.	No.	Cap- ital.	De- posits.	No.	De- posits.
		Millions.	Millions.		Millions.	Millions.		Millions.	Millions.		Millions.
New England states.....	42	8.19	15.06	71	2.86	3.23	1	0.07	1.14	441	403.47
Middle states.....	217	42.45	122.10	916	34.48	61.92	3	0.16	1.37	190	358.69
Southern states.....	233	27.38	30.67	280	7.30	13.68	4	0.88	1.28	3	2.14
Western states and terri- tories.....	361	46.33	61.65	1,589	33.16	105.00	15	2.13	22.39	34	39.05
United States.....	853	124.35	229.48	2,856	77.80	183.83	23	3.24	26.18	663	803.29

AGGREGATE AVERAGE CAPITAL AND DEPOSITS FOR FOUR YEARS.

GEOGRAPHICAL DIVISIONS. May 31st, 1878.	State Banks, Savings- Banks, Private Bankers, etc.			National Banks, June 29, 1878.			Total.		
	No.	Capital.	Deposits.	No.	Capital.	Deposits.	No.	Capital.	Deposits.
		Millions.	Millions.		Millions.	Millions.		Millions.	Millions.
New England states..	555	11.12	422.86	542	166.52	128.83	1,097	177.64	551.69
Middle states.....	1,336	77.09	544.07	634	177.18	377.89	1,960	254.27	918.96
Southern states.....	520	35.55	47.77	176	31.49	35.94	696	67.04	83.71
Western states and territories.....	1,999	81.62	228.09	704	95.20	137.50	2,703	176.82	465.59
United States.....	4,400	205.38	1,242.79	2,056	470.39	677.16	6,456	675.77	1,919.95

The antiquity of banks is very great. In Europe, the bank of Venice, the earliest on record, started in 1157; the bank of Barcelona, in 1401; of Genoa, in 1407; and of Amsterdam, in 1609. But in the metropolitan museum of art in New York are Babylonian tablets bearing distinct records of transactions in banking that took place in the reign of Nebuchadnezzar. The earliest tablet is of the year 601 B.C. On it are memoranda of loans of silver made by Kudurru as follows:—1 mina of silver to Suta, 1 mina to Balludh, $\frac{1}{2}$ mina to Beluepus, 5 shekels to Nabu-basa-napsati, and 5 shekels to Nergal-dann. Total. 3 minas, 5 shekels of silver. No. 2, dated at Babylon on the 12th day of the month of Sivan, in the 8th year of the reign of Nebuchadnezzar, 597 B.C., bears tabletary evidence, attested by three witnesses, of the loan of 2 minas, 10 shekels of silver, made by Nabu-suma-esir, son of Belu- * * * -ilani, son of the * * *, to Kudurru, son of Basa, son of Egibi. No. 3, dated at Babylon, month Tisri, 25th day, 8th year of Nebuchadnezzar, 597 B.C.—Loan of $\frac{2}{3}$ of a mina, and 4 shekels of silver, granted by Belu-balish, son of Musgul, son of Epes-ili, to Kudurru, son of Basa, son of Egibi. To be repaid on the 10th of the month of Kislev. There are four witnesses. No. 4, dated at Babylon, month of Tebet, 6th day, 22d year of Nebuchadnezzar, 583 B.C., records the sale of 9 measures of corn, or the promise to sell 9 measures of corn, by Belu-basa, son of Zira-yuquin, son of Munnabitti, to Suta, son of Kudurru, son of Egibi. Three witnesses. No. 5, dated Babylon, month Ab, 21st day, 31st year of Nebuchadnezzar, 574 B.C., refers to the payment of 24 measures of corn, and 56 shekels of silver, by Kasir and Iddin-Marduku, sons of Basa, son of Nur-Sini, to Belu-nasi, son of Suzabu, son of Beludini. No. 6 is dated

at Satkrini, 25th Sivan, 37th year of Nebuchadnezzar, 568 B.C. No. 7 is dated at Babylon, 12th Adar, 42d year of Nebuchadnezzar, 563 B.C. Nos. 8 and 9 are dated at Babylon, in the 2d and 3d years of the reign of Neriglissar, 558 and 557 B.C. Nos. 10, 11, 12, 13, 14, 15, and 16, are dated at Babylon, two in the 2d, one in the 4th, three in the 6th, and one in the 11th (?) year of Nabonidus, ranging, therefore, from 554 to 545 B.C. No. 17 is dated at Borsippa, in the 7th year of Nabonidus, 548 B.C. Nos. 18 to 30 date from the 8th to the 16th year of Nabonidus, 548 to 540 B.C. Nos. 31 and 32 are dated at Babylon in the 3d and 7th years of Cyrus, 534 and 530 B.C. No. 33 is dated at Lakkarrinu, and Nos. 34 and 35 at Babylon, the first in the 2d and the two others in the 6th year of Cambyses, 528 and 524 B.C. No. 36 is dated at Kharsak-Kalama, 25 Kislev, 1st year of Darius, 518 B.C. Nos. 38 to 43 date from Babylon and range from the 3d to the 26th year of Darius, 516 to 493 B.C. An interesting tablet is No. 44, which, dated at the city of Dhabi-Belu, 15th Nisan, 40th year of Nebuchadnezzar, 565 B.C., records 7 shekels of silver lent by Gimillu, son of Samsa-zira-ibni, son of Sinu-satnu, to Nabu-suma-iddin, son of Belu-balidh, son of Sakdidi, and Iddin-Marduku, son of Barsa, son of Nur-sini, in the course of the month Nisan * * * * by 1 shekel 5 times, give (back); 3 witnesses. Gimillu receives therefore 3 shekels interest. No. 45 bears an undated contract; No. 46, memoranda of loans, expenditures, etc. (undated); No. 47, also undated, similar contents; No. 48, an account of the produce of certain lands in the 14th year of Darius, with names of buyers and amounts; No. 49, an undated account of field produce, and No. 50, rough memoranda. No. 51 is dated at Babylon on the 18th day of the 14th year of Darius, 505 B.C. M. Lenormant divides these most interesting documents into five principal types: 1. Simple obligations. 2. Obligations with a penal clause in case of non-fulfillment. One he gives which had 79 days to run. 3. Obligations with the guarantee to a third party. 4. Obligations payable to a third person. 5. Drafts drawn upon one place, payable in another. He gives the following illustration of one of these letters of credit: "Four minas 15 shekels of silver (credit) of Ardu-Mana, son of Yakin, upon Mardukabalussur, son of Mardukbalatirib, in the town of Orchoe. Mardukbalatirib will pay in the month of Tibet 4 minas 15 shekels of silver to Belabaliddin, son of Sennaid. Our, the 14 arakhsamna in the 2d year of Nabonidus, king of Babylon." Then follow the names of witnesses. These Assyrian drafts were negotiable, but from the nature of things could not pass by indorsement, because, when the clay was once baked, nothing new could be added, and under these circumstances the name of the payee was frequently omitted. It seems to follow that they must have been regularly advised. It is remarkable that such instruments, and especially letters of credit, should have preceded the use of coins. The earliest banking firm of which we have any account is said to be that of Egibi & Co., for our knowledge of whom we are indebted to Mr. Boscawen, Mr. Pinches, and Mr. Hilton Price. Several documents and records belonging to this family are in the British museum. They are on clay tablets, and were discovered in an earthenware jar found in the neighborhood of Hillah, a few miles from Babylon. The house is said to have acted as a sort of national bank of Babylon; the founder of the house, Egibi, probably lived in the reign of Sennacherib, about 700 B.C. This family has been traced during a century and a half, and through five generations down to the reign of Darius.

BANK-NOTES, MANUFACTURE OF (*ante*). The bank-notes of the United States are now manufactured by the government in the treasury department at Washington. The processes of this manufacture are briefly described as follows: The design of the note, including all the lettering and devices thereof, upon a sheet of the required form, being in the hands of the workmen, they first proceed to make the die. A plate of soft, highly polished steel is selected, and upon it is sketched the design, or such portions of it as are of the same color, if more than one tint is to be used in printing. A separate die is needed for every shade used. This is then carefully engraved. It will be understood that, unlike the method of wood engraving, the lines which take the ink are cut into the plate instead of being raised above its surface. The engraver is limited to such parts of the work as can be done by hand; other portions, such as the scrolls and elaborate tracery, are done entirely by machinery. The principal apparatus used is a complicated piece of mechanism, which actuates a plate to which the steel for the die is attached and caused to press against a diamond point. Perfectly true and delicate lines are thus cut into the metal, making figures technically termed "cycloid rosettes." The machine, in theory, somewhat resembles a kaleidoscope, as it requires to be set by accurate pointers and dials to some special figure, which, when the combination is changed, can never be reproduced. One of these instruments is in use, and its work, together with that of the geometrical lathes, can be readily recognized on the national currency.

The die being complete, is ready for the transfer process. Postage stamps, for instance, are made in sheets of two hundred, so that the die must be transferred that number of times on a single plate. It is first case-hardened and then put, face up, in a press which is made with a combination of levers actuated by the foot, so as to give the tremendous pressure of twenty-one tons on a single line. A cylinder or "roll" of soft steel is, by careful gauging, placed so as to rest directly over the face of the die, and, at the same time, is so arranged as to revolve easily along its surface even when under the full weight. The pressure is then applied, with the result of forcing the soft steel of

the roll into the lines of the engraving, so that when complete, the periphery of the cylinder shows an exact reproduction of the face of the die, only the lines sunk on the die are now raised on the roll. Next, the cylinder is case-hardened. Then the plate—soft steel again—to be used for the final printing is placed in the press and the roll is arranged above it. Now the cylinder leaves its impression on the plate, the hard steel of the raised lines cutting deep into the surface, so that a precise duplicate of the original die is obtained. This is repeated as many times as there are to be repetitions of the stamp or note on the single plate, which is then ready for use.

The ink for printing is made on the spot. In a large room are ten or a dozen paint mills, which are busily grinding the colors and oil together. Two large ones are filled with green ink, another with vermilion, while others are making blue, red, and other tinted inks. Nothing but the finest color and the best boiled linseed oil is here used. We now pass to the paper room, where the paper is received directly from the government, cut in sheets of the required form. The fractional currency and larger notes are made of a peculiar material containing colored fibers. The paper for postage stamps is made of the best linen. It is of short fiber, very fine, and extremely strong. The sheets on which currency is to be printed are counted as soon as received, and the result reported for verification. They are placed in heaps, marked off in sets of 100 and 1000. When issued for printing, the workman receiving them has to present an order signed by the superintendent. They are then charged against him in his pass-book, when he carries them away to be damped, by simply wrapping them in wet cloths. The presses used are simply cylinders moved by long-handled levers, and are each attended by three men and a girl. The plate rests upon a small iron box warmed underneath by gas flames. A workman using a plate-printer's roller rapidly covers the plate with ink and passes it to another operative at his side, who wipes it with a soft cotton cloth, and then polishes with the palm of his hand covered with whiting, thus removing the ink from its surface, but not from the engraved lines which remain filled. This done, the plate is placed, face up, in the press. The girl stands ready with a sheet of damp paper which she carefully lays upon the plate. The pressman turns the levers, the cylinder revolves, the plate passes under it, and the paper is removed bearing a perfect impression. As soon as a printer has completed the work assigned to him, he hands it, made up in "books" of 100 impressions, each sheet inclosed between two others of brown paper, to a clerk. He is then credited with his delivery, spoiled sheets being counted the same as perfect ones, so that if his return is correct his debit account on his passbook, which is kept in a different apartment and by other employes, is thus balanced. The finished impressions are now carefully counted and inspected. The spoiled ones are removed and sent to the proper agents to be burnt, while the others are hung in the drying room. This apartment is heated by steam-pipes, and the paper is suspended by wires, for a day or two, until perfectly dry. Then the brown paper is removed, and the sheets, packed between leaves of press board, are subjected to the action of a powerful hydraulic press. They are then once more inspected and counted.

BANKS, a co. in n.e. Georgia, on Broad river; 250 sq. m.; pop. '70, 4973—924 colored. Productions, wheat, corn, cotton, and sweet potatoes. Co. seat, Homer.

BANKS, NATHANIEL PRENTISS, b. Mass., 1816; a statesman and general. He learned the trade of a machinist, studying in leisure hours; edited a newspaper in Waltham, and another in Lowell, was admitted to the bar; elected to the legislature in 1849, and made speaker in 1851. In 1852, he was chosen a member of congress. In 1853, he was president of the convention to revise the constitution of the state; in 1854, re-elected to congress, and chosen speaker of the house of representatives after the longest contest ever known (congress met Dec. 3, 1855, and the speaker was not elected until the 133d ballot, Feb. 2, 1856); he was again chosen to congress in 1856; and governor of Massachusetts 1857-59. He was commissioned maj.-gen. in the civil war, and was in active service until its close. After the war he was chosen and re-chosen to congress, until 1872.

BANKSIA, several genera of plants named after Sir Joseph Banks, but only one properly so—one of the family of proteaceæ, named *B.*, by Linnaeus. They are natives of Australia, of conspicuous and beautiful forms, with broad hard leaves, which closely cover the branches; flower and fruit in cones, the flowers projecting in spikes.

BANNACKS, BONNACKS, or PAUNAQUES, an Indian tribe of the Shoshone family, frequenting the Yellowstone region, and the territory between the Rocky mountains and the Sierra Nevada; about 1,000 in number; usually friendly to the whites. The *B.* are brave and proud, and the men are usually good looking. They speak a dialect of Shoshone.

BANNEKER, BENJAMIN, 1731-1806; a negro mathematician, a native of Maryland. His grandmother, a white woman, taught him reading and writing, and after his 50th year he began to study mathematics with special reference to astronomy. In 1792, he issued an almanac of his own making, and continued the series annually throughout his life. He assisted in fixing the boundary lines of the district of Columbia.

BANQUO, a Scotch warrior of the 11th c., the progenitor of the royal house of Stuart. In 1066, he joined Macbeth in a conspiracy against king Duncan, but was treacherously

slain by his confederate. Shakespeare does not mention him as a conspirator, but only as Macbeth's victim.

BANSHEE. See BENSHEE, *ante*.

BANZ, a Benedictine abbey in upper Franconia, near Lichtenfels, on the Main; founded in the 11th c., and celebrated for the superior culture of its monks. During the peasant's war in the 16th c., the abbey was destroyed, but immediately restored; again destroyed in the thirty years' war, and again restored. In 1802, it was broken up, the books and collections were scattered among German institutions, and the building became the summer residence of the king of Bavaria.

BAPTISTS (*ante*). The history of this denomination in the United States can be traced far back towards the first colonizing of New England by the pilgrim fathers. The first B. churches, however, were founded by Roger Williams, in Providence, R. I., and by John Clark, in Newport, R. I., during the year 1639. Williams at first met considerable opposition and persecution for declining to recognize the power of the civil magistrate in matters of religion; but in 1644 he obtained a charter for the land which he and his followers had colonized. It is now called Rhode Island, and was among the first states to grant religious liberty. In the other colonies the persecution of the Baptists lasted many years, occasioned not altogether by their religious views, but in part by their extreme views regarding civil government. Laws were made against them in Massachusetts in 1644, and some of them were banished in 1669; they were proscribed in New York in 1662, and in Virginia in 1664, but about the beginning of the 18th c. the authorities became more tolerant. It may be said here that the article on religious liberty to be found in the amendments of our constitution is in no small part due to the strenuous efforts of the B. in 1789.

The B. in the United States are divided into several denominations. After the revolution their cause steadily advanced; and the regular or associated B. denomination has now in the United States alone, according to the *Baptist Year Book* for 1879, 1075 associations, 24,499 churches, 14,954 ministers, 11,845 Sunday-schools, with 827,770 volumes in the libraries, and 2,102,034 church members. They have 9 theological seminaries: 2 in New York, at Hamilton and Rochester; 2 in Illinois, at Upper Alton and Morgan Park; 2 in Kentucky, at Georgetown and Louisville; 1 at Newton Center, Mass.; 1 at Upland, Pa., and 1 at Liberty, Mo.; the total number of students being 338, and 37 instructors; the total value of property \$1,685,178, and the endowment amounting to \$1,245,545. They have 31 colleges and universities, of which Brown university, founded in 1764 at Providence, R. I., is the most celebrated. The more prominent of the others are Colby university, at Waterville, Me.; Madison university, at Hamilton, N. Y.; Columbian university, at Washington, D. C.; the university of Rochester, N. Y.; the university of Chicago, Ill.; and Vassar college for women, at Poughkeepsie, N. Y. Total number of students in all the colleges, 4897, with 269 instructors; total value of property, \$7,096,726; amount of endowment, \$2,962,275; and 208,835 volumes in the various libraries of the colleges. According to the *Year Book*, they have 47 academies, seminaries, institutes, and female colleges, with 4632 students; a property value of \$2,361,000, and endowment of \$392,545. The home and foreign statistics for the year 1878 were, for the five continents, as far as reported:

	Associations.	Churches.	Ministers.	Members.
North America	1,096	25,325	15,525	2,192,454
Europe	60	3,053	2,089	308,913
Asia	1	576	234	34,784
Africa . . . . .	..	54	35	2,794
Australia	4	135	85	7,002
Total	1,161	29,143	17,968	2,545,947
In 1877	1,132	28,513	17,931	2,472,790

As to doctrine, government, and worship, the Calvinistic B. in America, as in England, agree in all essential points, except as to the subjects and mode of baptism, with the evangelical Congregationalists. They require baptism by immersion to entitle them to church membership, denying that any other mode is scriptural or valid. They disallow the baptism of infants, administering that rite to none but believers on the confession of their personal faith. In respect to communing at the Lord's supper with persons not regularly immersed, there is difference of view and of practice among B.—some holding to "open" and some to "close" communion. Open communions, common among English B., are in this country a very small minority of the denomination.

The B. have been distinguished for zeal and success in evangelizing the newer portions of the country, and must be recognized as supplying much of the Christian force with which American society has been molded. As a denomination, they are positive and aggressive. They are represented in nearly all the great cities by powerful, well-equipped, and rapidly augmenting churches. In missions among the heathen, they have shown great zeal; and though they have not sought to cover a great number of fields, they are not surpassed in modern times in diligent and persevering efforts. In

some countries, notably in Burmah formerly, and in northern India recently, their success in missionary labor has risen to grand proportions.

The associated B. in the United States meet annually in stated conventions for the promotion of missions, education, beneficence, etc. They have a publication society at Philadelphia.

BAPTISTS, ANTI-MISSION. See **BAPTISTS, OLD SCHOOL.**

BAPTISTS, CAMPBELLITE. See **DISCIPLES OF CHRIST.**

BAPTISTS, FREE-WILL, had their origin in a discussion which arose (1779) among B. in New Hampshire on the doctrines of Calvin, during which Benjamin Randall, one of Whitefield's converts, was called to account for preaching a general atonement and the ability of sinners to accept Christ. Having united with a church which agreed with his views, he was ordained at New Durham (1780), and, in connection with others of like faith, labored with zeal and success in preaching and establishing churches. They wished to be known simply as Baptists, but their opponents called them "free-willers," and both names having been combined, the denomination has adopted "Free-will Baptists" as their distinctive appellation. Their government, like that of the regular Baptists, is congregational, and they hold that scriptural baptism is the immersion of believers. Their peculiar doctrinal views are the general extent of the atonement, the free offer of salvation to all men, the freedom of the will (involving ability to accept or refuse Christ), and the right of true believers to participate in the Lord's supper. By this last tenet they rank as "open communionists." In 1784, the first quarterly meeting was organized among them; in 1792, the first yearly meeting, composed of delegates from the quarterly meetings; in 1827, a general conference was formed, which now meets triennially. In 1841, the Free-communion Baptists, a denomination which had arisen in the 18th c. in Rhode Island and Connecticut, and owed its origin to Whitefield's preaching, united with them. The whole body have uniformly held anti-slavery views, and, a few years before the war of the rebellion, withdrew fellowship from 4000 members in North Carolina because they were slave-holders; and, for the same reason, declined to receive 12,000 members in Kentucky who sent delegates to their general conference. At the fifth conference (1831), the subject of foot-washing having been discussed, liberty was given to the churches to retain or give up the ordinance, as each might prefer. Many of them have since chosen to give it up. They have flourishing literary institutions in several states; among which are Bates college at Lewiston, Me.; Hillsdale college, Mich.; a theological seminary at New Hampton, N. H.; and a printing establishment at the same place. They have about 1500 churches, 1300 ministers, and 75,000 members, most of whom are in the northern states and Canada.

BAPTISTS, GERMAN, commonly called **DUNKERS** or **TUNKERS** (from the German *tunken*, to "dip"), and, among themselves, **BRETHREN**, originated at Schwarzenau, Germany, 1708, but were driven by persecution to America about 1725. In 1790, a party who held universalist views having separated from them, the whole denomination were, somewhat perversely, supposed to agree with them. But they have always denied the charge and, with the Mennonites, appeal to the confessions of faith published in Holland two centuries ago. They practice trine immersion (placing the candidate forward instead of backward) with the laying on of hands while the person is in the water. Their officers are bishops, elders, teachers, and deacons. The bishops are chosen from among experienced and faithful teachers. It is their duty to itinerate among the congregation, preach, officiate at marriages and funerals, and be present at love feasts, communions, ordinations, elections of teachers and deacons, and when an officer is to be excommunicated. An elder is the oldest teacher in a congregation where there is no bishop. His duties are to appoint meetings, exhort, preach, baptize, travel occasionally, and to perform all the work of a bishop when none is present. Teachers are elected. Their duties are to exhort and preach at stated meetings, and, when requested by a bishop or an elder, to officiate at baptisms and marriages. The deacons take care of the poor widows and their children, visit the families of the congregation to exhort, comfort, and instruct them, reconcile offenses and misunderstandings; and, upon occasion, to exhort, read the scriptures, and pray at meetings. An annual meeting of bishops, teachers, and delegates is held about May, at which a committee of five bishops decide cases presented to them by the teachers and delegates. In plainness of speech and dress German Baptists resemble the society of Friends. They do not go to law, will not fight, and seldom take interest on money loaned to their poorer brethren. They are opposed to statistics, as savoring of pride; but, according to recent reports, they have 500 churches, 1,200 preachers, and 50,000 church members, chiefly in Pennsylvania, Maryland, Virginia, Ohio, and Indiana.

BAPTISTS, OLD SCHOOL, a sect frequently called **ANTI-MISSION** or **ANTI-EFFORT** B., from their opposition to missionary societies, Sunday schools, and all religious organizations that make man's salvation dependent on human effort. They have neither colleges nor theological seminaries. They are mostly to be found in the western and south-western states. They have 900 churches, 400 ministers, and 40,000 members. At present they are not increasing.

BAPTISTS, SEVENTH-DAY, as their name implies, are distinguished from other Baptists and other denominations by regarding the seventh day of the week as the Sabbath. They believe that the first day was not generally observed as such in the Christian church before the time of Constantine. Traces of seventh-day keepers are found in the days of Gregory I. (590), Gregory VII. (1075), and in the 13th century. In Germany they appeared late in the 15th century. In England they were organized as a denomination in 1550, under the name of Sabbatarians, and, at the close of the c., had 11 churches, of which only three remain. In America they date from the last quarter of the 17th c., having formed their first church at Newport, R. I., about 1671. They commenced their yearly meetings at the opening of the 18th c., and their general conference at the beginning of the 19th c., holding it at first annually, but now triennially. In 1813 they adopted the name Seventh-day Baptists instead of Sabbatarians; and in 1845 arranged themselves in five associations, eastern, western, central, Virginia, and Ohio. They favor total abstinence from strong drink, and other reforms; have a department for publishing tracts and books, and support missionaries in China and Palestine. At the general conference in 1878, 55 churches were represented by letter. They have 75 churches, 83 ministers, and 7,333 members. Their literary institutions are a university at Alfred Center, N. Y., colleges at Shiloh, N. J., and Milton, Wis., De Ruyter institute, N. Y., and several academies.

BAPTISTS, SEVENTH-DAY GERMAN, a denomination in the United States which seceded from the German Baptists, or Dunkers. They recommend celibacy as a virtue, but do not require it, and worship on the seventh day instead of the first day of the week. Their largest settlement is at Snowhill, Franklin co., Pa. They have probably a few hundred members, and a dozen ministers.

BAPTISTS, SIX-PRINCIPLE, a small denomination, first heard of as a separate organization in Rhode Island in 1639. They are of the Arminian persuasion, holding to a general atonement; and their creed consists of the six principles to be found in Heb. vi. 1, 2, namely: repentance, faith, baptism, laying on of hands, the resurrection, and the eternal judgment. Their ministers are poorly educated and poorly supported, and the denomination is confined to Rhode Island, New York, Pennsylvania, and Massachusetts. They have 20 churches, 12 ministers, and 3,000 members.

BAPTISTS—THE CHURCH OF GOD. See WINEBRENNERIANS.

BARABOO, chief t. of Sauk co., Wis., on B. river; pop. of township, '70, 2758. It has a number of manufactories.

BARAB'RA, or **BERAB'ERA**, people of a district in upper Nubia, different from the Berbers. They trade in cattle with Egypt.

BARA'DA, supposed to be the Abana of the Bible; a river of Syria, rising in Anti Libanus, and ending in marshy lakes e. of Damascus, which city is on the main stream, the stream being made to divide in the city, but uniting again after passing it.

BARA'GA, a co. in n. Michigan, taken from Houghton co. in 1875.

BARA'GA, FRIEDRICH, D.D., 1797-1868; a Roman Catholic bishop and missionary, native of Carniola. He came to this country in 1830, and spent his whole life in the Chippewa and Ottawa missions in Michigan. He wrote a Chippewa grammar and dictionary, and in German, the *History, Character, and Habits of the North American Indians*.

BARAHAT, a t. in n. Hindustan, in the Himalayas, 30° 43' n., 78° 29' east. The t. was nearly ruined in 1803 by an earthquake, most of the houses (built of stone with slate roofs) being thrown down. In the neighborhood is a trident in honor of Siva; a copper pedestal upholding a brass shaft 12 ft. high, with forks 6 ft. long. Though this curious trident bears a legible inscription, no one has yet translated it, and the origin of the work is unknown. The temple in which it stood was destroyed by an earthquake.

BARANOFF, ALEXANDER ANDREYEVITCH, 1746-1819; first governor of Russian America. In 1796, he established a colony on Pelring's strait; in 1799 took possession of one of the Sitka islands (now Baranoff island), began trade with the natives, and subsequently extended his operations to Canton, Sandwich islands, Boston, New York, and other distant places. He died while on his return to Russia.

BARANTE, AMABLE GUILLAUME PROSPER, Baron de Brégière, 1782-1866; a French statesman and historian of the dukes of Burgundy. While yet young, he was employed in political missions in Germany, Poland, and Spain, and was prefect at Nantes at the time of Napoleon's return from Elba, when he at once resigned. On the second restoration he was made councilor of state and secretary-general to the minister of the interior, and was elected to the chamber of the deputies. In 1819, he was made a peer of France, and took an active part in the debates of the chamber. After the revolution of 1830, he was sent as ambassador to Turin, and five years later filled the same position at St. Petersburg. He supported Louis Philippe, and retired from public life on the fall of the monarchy in 1848. His great work is the *History of the Dukes of Burgundy of the House of Valois*, which procured for him membership in the academy. He was the author of historical and literary miscellanies, a work on constitutional questions,

a history of the national convention, a history of the directory, studies in history and biography, etc.

BARANYA, a co. in s.e. Hungary on the Danube and the Drave, on the border of Slavonia; 1966 sq.m.; pop. '70, 283,506, more than half Magyars. It is fertile, producing cereals, tobacco, and wine, and is rich in cattle. Chief towns, Pécs, the capital, and Mohacs, where, in 1526, Hungary's king, army, and independence were lost.

BARATIERE, or BARETTIER, JOHN PHILIP, 1721-40; a wonder of precocity, a native of Nuremberg, the son of a Protestant pastor, exiled from France on the revocation of the edict of Nantes. Before his 5th year he read and wrote French, German, and Latin, and afterwards, with almost no assistance, mastered Greek, Hebrew, Syriac, Arabic, and Ethiopic. Before he was 9 years old he made a catalogue of the more difficult words in Chaldee and Hebrew, and in his 13th year made a translation of some of the Hebrew writings of Benjamin of Tudela, with notes and historical disquisitions. About the same time he published theological disquisitions, and amused himself with abstruse astronomical and other mathematical calculations. When but 14 he was made master of arts by the university of Halle, on which occasion he defended 14 propositions before an immense audience. The royal society of Berlin made him a member, and the king gave his father a living. Some time before his death he began a history of the church. He was never strong in health, and the active mental labor, which he would not relinquish, took him away 4 months before he was 20 years old.

BARATYNS'KI, JEWGENIJ ABRAMOVITCH, 1793-1844; a Russian poet. He served as a soldier in Finland, where he imbibed the ideas that appear in his poem of *Eca*. His other notable work is *Gypsy*, a picture of Russian high life.

BARBARELLI, GIORGIO. See GIORGIONE, *ante*.

BARBÉ-MARBOIS, FRANÇOIS DE, 1745-1837; a French statesman. He was consul-general of France for the United States, where he wedded a daughter of Wm. Moore, of Pennsylvania. In 1785, he was governor of San Domingo, where he made many reforms. In 1797 he was exiled to Guiana for political reasons, but recalled in 1801 and made minister of finance. He negotiated the sale of Louisiana to the United States, and got for it 25,000,000 francs more than Napoleon really asked, for which he was liberally rewarded. He was a member of the senate in 1813, and favored the restoration of the Bourbons, for which Louis XVIII. made him a peer of France. After the overturn of July he swore fealty to Louis Philippe. Among his works are *Reflexions sur la Colonie de Saint-Domingue*, *Complot d'Arnold et de Sir Henry Clinton contre les Etats-Unis d'Amerique et contre le Général Washington*, *De la Guyane*, and *History of the Cession of Louisiana to the United States*.

BARBER, FRANCIS, 1751-83; an American revolutionary colonel, graduate of the college of New Jersey, and one of Alexander Hamilton's preceptors. He volunteered when the war began, was in several engagements, was severely wounded at Monmouth, and again at Newtown. At the time of the mutiny of the Pennsylvania and New Jersey troops, B. was successful in speedily suppressing the revolt. In the autumn of 1783, on the day that he was invited by Washington to come to Newburg and hear the news of peace, B. was killed by a tree falling upon him. His brothers John and William were officers in the New Jersey line.

BARBERINI, the name of an Italian family who settled in Florence in the 11th c., whose members were for 500 years foremost among traders, besides figuring largely in high offices. In 1623, MATTEO B. became pope Urban VIII.; his brother Antonio and two nephews were made cardinals, and his brother Carlo general of the papal forces. Carlo was succeeded in the command by his son Taddeo, the husband of Anna Colonna. Taddeo became prefect of Rome after the death of the duke of Urbino, whose possessions were added to the papal territories. Other Italian princes became jealous of the B. family, and made war upon and defeated Taddeo's papal forces. Urban's successor, Innocent X., became hostile to the Barberini, and Taddeo fled to Paris, where he died. The principality of Palestrina still belongs to the family, and their magnificent palace and library in Rome attest their vast wealth and magnificence.

BARBÈS, ARMAND, 1809-70; a French revolutionist, and leader in secret political societies, at various times imprisoned, and in 1839 sentenced to death as the main leader of an insurrection in which a lieutenant was murdered; but he was spared. While in prison he wrote *Two Days under Condemnation of Death*. In 1848, he was chosen to the constituent assembly, and in the same year, with Raspail and others, he was sentenced to life-imprisonment. When set free he refused to receive pardon, asking to be allowed to return to jail, but this was denied him, and he left the country.

BARBEYRAC, JEAN, 1674-1744; a French writer on law, the son of a Protestant minister expatriated by the revocation of the edict of Nantes. B. taught in Lausanne and Berlin, and was professor of international law in Groningen. His fame rests chiefly on the preface and notes to his translation of Puffendorf's *De pure Naturæ et Gentium*. He also translated Grotius' *Law in War and Peace*. Among his own works are a *History of Ancient Treatises*, and *Traité du Jeu*, in which he defends the morality of games of chance.

BARBIER, ANTOINE ALEXANDRE, 1765-1825; a French librarian, who took orders as a priest, but abandoned the church for literature. He collected for the new institutions established in 1794 the books and works of art of the convents previously abolished; in 1798 he was librarian for the directory, and afterwards for Napoleon, making up the libraries of the Louvre, of Fontainebleau, and of Compiègne. Under the restoration he had charge of public libraries until 1822. B. was the author of *Nouvelle bibliothèque d'un homme de goût* and a dictionary of pseudonyms and anonymous writers.

BARBIERI, GIOVANNI FRANCESCO. See **GUERCINO**, *ante*.

BARBOUR, a co. in s.e. Alabama, on the Chattahoochee, adjoining Georgia; 900 sq. m.; pop. '70, 29,309-17,165 colored. It is fertile, producing corn, cotton, molasses, and sweet potatoes. Co. seat, Clayton.

BARBOUR, a co. in s. Kansas, on the border of the Indian territory; 1,134 sq. m.; pop. '75, 1,388. It has an undulating prairie surface. Co. seat, Medicine Lodge.

BARBOUR, a co. in n.e. West Virginia; 330 sq. m.; pop. '70, 10,312-386 colored; in '80, 11,810. It is hilly, and good for grazing; coal, iron, and salt mines are worked. Co. seat, Philippi.

BARBOUR, JAMES, 1775-1842; a lawyer, member of the Virginia legislature, 1796-1812; governor two terms; United States senator two terms; secretary of war in 1852; minister to England in 1828, but recalled by Jackson. He presided over the national convention that nominated Harrison and Tyler.

BARCA, or **BARCE**, an ancient city in Cyrenica, in the district of B., Africa, the ruins now being known as El-Medinah. It was on high ground, about 11 m. from the sea, founded by a Cyrenean colony about 554 B.C. The Persians captured and pillaged the city about 510 B.C., and many of its people were led as captives into Bactria. B. existed for several centuries after the Christian era, and appears to have risen to importance under the Arabs.

BARCA, or **BARCAS**, signifying "lightning," applied to Hamilcar and other Carthaginian commanders, because of the rapidity of their military movements.

BARCELO'NA, a state or department of Venezuela, between the Caribbean sea and the Orinoco; 13,812 sq. m.; pop. '73, 101,396. Besides many cattle, it produces coffee, cocoa, cotton, cane, corn, and tropical fruits.

BARCELO'NA, formerly New B., the capital of the state of B. on the Neveri, near the ocean, 160 m. e. of Caraccas; pop. 7644. The city is dirty and unhealthy, yet has considerable export trade in hides, cattle, indigo, cotton, etc.

BARCLAY, JOHN, 1734-98; the founder of a small sect in the Scotch church called Bereans, or Barclayites. He was assistant minister at Fettercairn, where he attracted crowds by his novel doctrine; the presbytery disapproving refused him the usual testimonials, and he was dismissed from his position. The general assembly sustained the presbytery, whereupon B. left the church, but continued to preach in Edinburgh, London, and other cities, but with no great success. The Bereans claim to found their system upon the gospel alone, without reference to human authority. As a sect they are not important in number or influence.

BARCLAY, WILLIAM, LL.D., 1541-1605; a Scotch writer on law. He studied in France, under the famous Cujas; became professor of civil law in the university of Pont-à-Mousson, and was made counselor of state by the duke of Lorraine. He married a French lady, and their son John became celebrated as the author of the *Argenis*. This boy the Jesuits desired to educate, but the father opposed it, which roused the enmity of the Jesuits so that B. was compelled to leave France. King James offered him preferment if he would join the church of England, but he refused and returned to France, becoming professor in the university of Angers. He was the author of a number of important works on law.

BARCLAY, or **BARCLAY-ALLARDICE, ROBERT**, 1779-1854; a captain in the British army, and a descendant of Barclay of Ury; noted as a pedestrian, at his greatest effort walking 1000 m. in 1000 consecutive hours. In later life he was a breeder of cattle and sheep.

BARD, JOHN, 1716-99; b. Penn.; a physician, and first president of the medical society. He established the first quarantine on Bedloe's island, in New York harbor.

BARD, SAMUEL, LL.D., 1742-1821; b. Philadelphia; son of Dr. John; studied in Columbia college and the Edinburgh medical school; organized the medical school of Columbia college, and became dean of the faculty. While the federal government was in New York he was Washington's family physician. In 1813, he was president of the college of physicians and surgeons.

BARDINGS, or **BARD**, such parts of horse-armor as protect the animal's head, neck, and rump; the "champfront," the "manifaire," the "poitrel," and the "croupier."

BARDSTOWN, or **BAIRDSTOWN**, the seat of justice of Nelson co., Ky.; 40 m. s.e. of Louisville, on a branch of the Louisville and Nashville railroad; pop. '70, 1835. It is

the seat of St. Joseph's (Roman Catholic) seminary and college, a college for women, an academy, and several important manufacturing establishments.

BAREBONES, or BARBONE, PRAISE GOD, a London tanner and feckless member of the parliament of 1653, which became known by his name. After a short imprisonment at the restoration he was lost sight of.

BARENTZ, WILLEM, one of the early explorers of the northern ocean; sailed from Holland in June, 1594, to find a n.e. route to China; explored a great part of Nova Zembla and returned. Next year he sailed with seven vessels laden with rich goods for eastern trade, but too late in the season to succeed. In May, 1596, he went as pilot of two ships sent out by the city of Amsterdam; at Spitzbergen the ships separated, and B. guided his own around Nova Zembla until frozen in at Ice Haven, Sept. 1, where they passed the winter in great misery, the sun being below the horizon 81 days. June 14, 1597, those who survived started in open boats for the mainland: B. died the second day; the others reached Lapland, where they found the other vessel, and were rescued. Interesting relics of B.'s expedition have recently been discovered.

BARIAM, RICHARD HARRIS, 1768-1845; an English humorist known as "Thomas Ingoldsby." He began to study law, left it for the church, and was ordained in 1813. In 1821, he was appointed minor canon of St. Paul's, London, and three years later became one of the priests in ordinary of his majesty's chapel royal. In 1837, he began in *Bentley's Magazine* the grotesque *Ingoldsby Legends*, which gave him immediate and enduring fame as a humorous writer, one with scarcely a rival since Butler wrote *Hudibras*. Yet his life was grave and dignified, and he was held in high honor. Though a tory in politics, he was the life-long friend of Sydney Smith, the prominent liberal; and Theodore Hook was also among his friends. He published one novel, *My Cousin Nicholas*, and contributed largely to the *Edinburgh Review* and the *Literary Gazette*, besides furnishing a third of the articles for a large biographical dictionary. "His sound judgment and kind heart made him the trusted counselor, the valued friend, and the frequent peace maker; and he was intolerant of all that was mean, base, and false."

BA'RI, or BARIS, a savage negro tribe on the White Nile, living under chiefs. They are polygamists, and generally at war with traders, or among themselves. The poorer classes are employed in manual labor.

BA'RI, TERRA DI, a province in Italy, on the Adriatic, n. of Otranto; 2406 sq.m.; pop. '71, 604,540. The surface is mostly level, soil calcareous, covered with loam; the summers very hot, but other seasons pleasant. The Ofanto is the only river of any size. The province is well cultivated, producing grain, tobacco, flax, cotton, wine, oil, almonds, etc. Fine-wooled sheep are numerous, and salt and niter works are important. Besides the capital of the same name, the chief towns are Barletta, Trani, Bisceglie, Molfetta, Monopoli, and Tasano, on the coast, and Andria, Ruvo, Nola, Bitonto, and Conversano, inland.

BARINAS, or VARINAS, a state in s. central Venezuela; 17,494 sq.m.; pop. 210,000; a fertile region producing coffee, indigo, tobacco, and tropical fruits in abundance, besides immense herds of cattle, sheep, asses, and mules. Barinas, the city of the same name, is on the Santo Domingo, 262 m. s.w. of Caraccas; pop. 3950. It was once prosperous, but was sacked by royalists during the war of independence. Tobacco of excellent quality is its chief export. The streets are regular, and the houses neat and clean.

BARING, CHARLES, b. 1807; son of sir Thomas; a graduate of Oxford; bishop of Gloucester and Bristol in 1856; in 1861, the successor of Montague Villiers in the see of Durham.

BARING, THOMAS GEORGE, b. 1826; the second lord Northbrook. He has been a lord of the admiralty, under-secretary for war, member of parliament, and in 1872 was appointed viceroy and governor-general of India.

BARING-GOULD, SABIE, b. 1834; an English author educated at Cambridge; in 1863 he published *Iceland, its Scenes and Sagas*. He subsequently took orders, and was curate in several places. Among his works are *Post-Medieval Preachers*, *The Book of Were-Wolves*, *Curious Myths of the Middle Ages*, *Origin and Development of Religious Belief*, *The Golden Gate*, *Legends of Patriarchs and Prophets*, etc.

BARKER, FORDYCE, b. Maine, 1810; graduated at Bowdoin, and studied medicine at Harvard, Paris, and Edinburgh; professor of midwifery at Bowdoin, and in New York medical college; president of the New York state medical society, and professor of clinical midwifery and diseases of women in Bellevue medical college. He wrote, in 1872, a treatise on puerperal diseases.

BARKER, GEORGE F., b. Mass., 1835; graduate of Yale scientific school; chemical assistant in Harvard medical school; professor of chemistry and geology in Wheaton (Ill.) college; acting professor of chemistry in Albany medical college; professor of physiological chemistry and toxicology in Yale; professor of chemistry in the university of Pennsylvania, and vice-president of the American association for the advance-

ment of science. He has lectured in many cities, and is author of a *Text-Book of Elementary Chemistry*.

BARKER, JACOB, 1779-1871; b. Maine; an eminent merchant and financier. He began trade in New York; lost his fortune in 1801; recovered soon after, and in the war of 1812 raised a loan of \$5,000,000 for the government. He was a state senator in New York when the senate was the court of appeals. He established a newspaper to advocate the election of De Witt Clinton for governor; founded the exchange bank in New York, and became a heavy operator in stocks; failed, was indicted with others for conspiracy to defraud; defended himself in person, and the jury disagreed; was tried twice more, and then the indictment was quashed. He removed to New Orleans in 1853 and built up a fortune, but was impoverished by the rebellion, in which he was loyal to the union.

BARLETTA, GABRIELLO, an Italian Benedictine preacher of the 18th c., famous for eccentricity as well as eloquence, interlarding the reading of litanies with sharp practical comments. His collected sermons passed through many editions.

BARLOW, FRANCIS CHANNING, b. N. Y., 1834; a graduate of Harvard; served in the union armies of the rebellion, and rose to be maj.gen. He has been secretary of state and attorney-general of New York.

BARNABY LECTURES, of the university of Cambridge, where four persons are chosen annually on St. Barnabas day to lecture on mathematics, philosophy, rhetoric, and logic.

BARNARD, FREDERICK AUGUSTUS PORTER, S.T.D., LL.D., L.H.D., b. Mass., 1809; graduated at Yale in 1828; in 1831, teacher in the Hartford deaf and dumb asylum; 1837-48, professor of natural philosophy and mathematics in the university of Alabama, and of chemistry until 1854, when he took orders in the Episcopal church. In 1855, he was professor of astronomy and mathematics in the university of Mississippi, and president of that institution in 1856. He became president of Columbia college, N. Y., in 1864, and is in office now (1889). He was U. S. commissioner to the Paris exposition of 1857, and published a report on machinery and industrial arts, in 1869. He is author of a *Treatise on Arithmetic, Analytical Grammar with Symbolic Illustration, Letters on Collegiate Government, History of the U. S. Coast Survey, Recent Progress of Science, The Metric System*, and various smaller papers. In 1860, he was one of the party sent to Labrador to observe an eclipse of the sun; in 1862, he was at work on the reduction of Gillis's observations of the stars of the southern hemisphere; in 1863, he superintended the publication of maps and charts of the U. S. coast survey; he was president of the American association for the advancement of science in 1860; a member of the board of experts of the bureau of mines in 1865; and a member of the American institute in 1872. He is a member of many distinguished societies in other countries, and also a frequent contributor to home and foreign scientific publications.

BARNARD, HENRY, LL.D., b. Conn., 1811; graduate of Yale; admitted to the bar in 1855; member of the Connecticut legislature, 1837-40, where he labored for common school and prison reform; eight years superintendent of schools, when he improved school buildings, established teachers' institutes, high schools, and a normal school. He was also school commissioner for Rhode Island; in 1859, became president of Wisconsin state university, but soon resigned for ill health; afterwards president of St. John's college, Md.; in 1837-69, U. S. commissioner of education. He is author of six works on schools, and has edited two or more journals in the interest of education.

BARNARD, JOHN, 1681-1770; a graduate of Harvard; chaplain of the Port Royal expedition; was offered appointment as chaplain in England, but refused to conform; ordained at Marblehead, Mass., in 1716, and held that pulpit through his life. He published a version of the Psalms, and was active in promoting the business interests of the town.

BARNARD, Sir JOHN, 1635-1764; an English merchant; represented London in parliament for 40 years; was knighted in 1732, and was lord mayor in 1737. He was the originator of a scheme for reducing the English national debt. There is a statue of him in the royal exchange.

BARNARD, JOHN GROSS, LL.D., b. Mass., 1815; brother of Frederick A. P.; military engineer of West Point, 1843; employed as constructing engineer until 1846, rising to col. of engineers and brevet maj.gen. of the U. S. army. In the Mexican war he fortified Tampico. In 1851, was chief engineer of the Tehuantepec survey; in 1856, superintendent of West Point academy; and for four years in charge of the defense of New York. In the rebellion he superintended the defenses of Washington. On gen. Grant's staff he was chief engineer of the armies in the field, and since the war has been a member of the boards having charge of fortifications and river and harbor obstructions. He has published *Problems in Rotary Motion, Dangers and Defenses of New York, Notes of Sea Coast Defense, The C. S. A. and the Battle of Bull Run, Artillery Operations of the Army of the Potomac*, etc.

BARNBURNERS, a section of the democratic party in New York about 1848, opposed to the extension of slavery, and supported Van Buren for president against

Cass, the regular nominee. Their vote, dividing the democratic strength, gave New York, Connecticut, and Massachusetts to Taylor, the whig nominee, and secured his election. The name was suggested by the story of the farmer who burned his barn to clear it of rats. The other section of the democracy in New York was called "Old Hunkers."

BARNEGAT, a village in Ocean co., N. J., frequented by sportsmen in search of wild fowl, and peopled chiefly by seamen. It has an academy, and is a good place for sea-bathing.

BARNEGAT BAY, on the Atlantic, in Ocean co., N. J., 23 m. long and 1 to 4 m. wide, separated from the ocean by Squan beach. At the mouth is a light-house, 39° 45' 48" n., 74° 6' 3" w., showing a white flashing light.

BARNES, a co. in e. Dakota, crossed by the North Pacific railroad and by the Sheyenne river; 1584 sq.m.; pop. '80, 1615. It is an agricultural region, raising wheat being the chief business. The river affords good water-power. Co. seat, Valley City; pop. 527.

BARNES, ALBERT (*ante*), 1798-1870; b. N.Y.; a theologian; graduate of Hamilton college and of Princeton seminary; licensed to preach in 1823, and after occupying pulpits in several New Jersey towns, was called to the First Presbyterian church in Philadelphia, where he officiated more than 30 years, resigning only because of failing eyesight. He was a thoughtful and spiritual preacher, but is better known for his *Notes* on various books of the Bible, those on the New Testament having at one time a wider circulation than any similar work. Just before he died he had completed a new version of the *Notes*, with many additions, which was published in six vols. in 1871-72. During the disruption of the Presbyterian church, he was tried for heresy and silenced for a short time, but the accusation failed to command public assent. In the final separation he went with the new school side, and was among the most liberal of their leaders. He was also a firm, though never violent, opponent of slavery. Besides the *Notes*, and many articles in periodicals, B. is author of an introduction to *Butler's Analogy*, *Scriptural Views of Slavery*, *The Way of Salvation*, *The Atonement*, *Claims of Episcopacy*, *Church Manual*, *Lectures on the Evidences of Christianity in the Nineteenth Century*, *Prayers for Family Worship*, several volumes of sermons, and a series of Sunday-school manuals. He was noted for a balanced judgment, and for Christian meekness and fidelity.

BARNES, JAMES, 1806-69; b. Mass.; a graduate of West Point in 1829; a prominent military and civil engineer. In the civil war he was col. and brig. gen. of volunteers, and brevet maj.gen. He was wounded at Gettysburg, and died in Springfield, Mass., from disease contracted in the service.

BARNES, JOSEPH K., b. Philadelphia, 1817, surgeon and brig.gen. in the U. S. army; appointed surgeon in 1856; in 1863, medical inspector; in 1864, surgeon-general.

BARNEY, JOSHUA, 1795-1818; b. Baltimore. Before he was 17 years old he was made lieutenant, for gallant service in capturing an English brig in Delaware bay. During the war of the revolution, in which he was three times taken prisoner, but exchanged, he made some important captures, particularly that of the *Gen. Monk*, of 20 guns, off the cape of Delaware in 1782. In that vessel he went to France and brought back a large amount of money, a loan by France to the colonies, and also news that the preliminaries of peace were agreed upon. He was made a captain in the service of France in 1795, but resigned in 1800. In the war of 1812 he commanded the fleet that defended Chesapeake bay, and was wounded in the battle of Bladensburg. In 1818, he started for Kentucky, where he intended to settle, but died on the way.

BARNSTABLE, a co. in s.e. Massachusetts, including cape Cod and some islands; 290 sq.m.; pop. '75, 32,144. Its surface is low and level. Most of the inhabitants are fishermen and seamen. Co. seat, Barnstable.

BARNSTABLE, a t. and seat of justice of B. co., Mass., on B. bay, 65 m. s.e. of Boston; pop. '70, 4793. Its inhabitants are mostly fishermen and seamen.

BARNWELL, a co. in s.w. South Carolina, separated from Georgia by the Savannah river; 1550 sq.m.; pop. '70, 35,724-22,146 colored. The soil is fertile and produces wheat, corn, oats, cotton, rice, etc. Co. seat, B. Court House.

BAROC'CHIO, or BAROZZI GIACOMO DA VIGNOLA, 1507-73; an Italian architect, who succeeded Michael Angelo as the architect of St. Peter's, and constructed other great works in Rome. He also supplied the designs for the Escorial. His *Five Orders of Architecture* is an excellent and useful work.

BAROMETRIC LIGHT, a faint electric light produced in the vacuum of a mercurial barometer by swinging the instrument to and fro, causing friction of the mercury against the inside of the tube.

BARON, BERNARD, 1700-62; a French engraver of merit, who lived several years in England, where he died. He engraved for Crozat's collection of prints.

BARON, or BAYRON, MICHAEL, 1653-1729; a French actor, instructed by Moliere. He was also a writer of plays. As an actor he was excellent in tragedy and in comedy, but he was inordinately vain of his personal appearance, and very frequently connected

with the scandals of the time. He was stricken with apoplexy while on the stage, and died two weeks afterwards.

BAROTSE, a valley in s. Africa, $15^{\circ} 20'$ to $16^{\circ} 30'$ s., and 23° to 24° e., traversed by the Zambesi river, and subject to its inundations. The natives build their villages on natural or artificial mounds to escape this overflow. The Barotses reverence the sun, pray to the alligator, which animal abounds in the river, and believe in some future existence. Their chief town is Narile. The soil of this valley is fertile, and will produce two crops in a year, but not much of it is cultivated.

BARR, a t. in Alsace, at the foot of the Vosges, 18 m. s.w. of Strassburg; pop. '11, 5651. In 1592 it was destroyed by the cardinal of Lorraine. Near the t. is Mt. Odilia, on which a daughter (canonized as St. Odilia) of duke Attie of Alsace, established a monastery. The building was sold during the revolution of 1789.

BARRACKS (*ante*). The "Regulations" of the U. S. army prescribe 225 to 226 sq. ft. of space for every six soldiers, with height of 12 ft., giving each one 450 to 512 cubic feet. There are few masonry-built B. in the United States. Most of them are of logs or lighter timber. Of the more permanent are Madison B., at Sackett's Harbor, N. Y.; Citadel, at Charleston; Pensacola, at Pensacola; Jackson, at New Orleans; Jefferson (now an arsenal), at St. Louis; Baton Rouge arsenal, La.; Mt. Vernon arsenal, Miss.; Oglethorp, at Savannah; Benicia, in California; Carlisle, in Penn.; Ft. Leavenworth, at Omaha; Newport, in Kentucky; San Francisco; Ringgold and Fort Brown, in Texas. There are B. for marines at the various navy yards.

BARRE, a t. in Massachusetts, on the Ware river, 21 m. n.w. of Worcester; pop. '70, 2572. B. is a town of farms and dairies, and has important manufactures, but is notable chiefly for an institution which has been very successful in the training of feeble-minded children.

BARRÉ, ISAAC, b. Dublin, 1726-1802. He was in Wolfe's army as lieut.col., was wounded in the capture of Quebec, and was with Wolfe when he died. In 1761, he was chosen to parliament, where he attracted attention by a violent personal attack upon Pitt, who led the opposition to Bute's administration. In 1765, he opposed the stamp act, supported the appeal of the colonies, and continued friendly to the Americans throughout North's administration. B. held various offices of importance, and was in parliament until 1790, when he retired in consequence of loss of sight. The authorship of the *Junius* letters has been attributed to him, but is not known.

BARRÉGES. See **BARÉGES**, *ante*.

BARREL-MAKING MACHINERY. The saw for cutting staves is a cylindrical sheet, having teeth upon one end; the blocks of wood are clamped in the usual manner, and the staves fall within the cylinder. They are then laid upon an endless conveyer, which carries them against two circular saws that cut them a definite length. Each piece is then placed in a pair of clamps, and moved against a rotary wheel provided with cutters, that dress the edge to the required bilge and bevel; the *bilge* is the increased width midway between the ends, which causes the enlarged diameter of the cask at the middle; the *bevel* is the angle given to the edge conforming to the radius of the cask. The surface of the stave is smoothed by passing it under revolving cutters; a late form of machine takes off the surplus wood from riven staves without cutting across the grain, following winding or crooked pieces as they are split from the block. The heads are usually made of several flat pieces jointed and fastened with dowels, or pins of wood. The edge of each piece is pushed against the side of a rotary disk, provided with cutters that instantly straighten it; it is then pushed against bits that bore holes for the pins to be afterwards inserted by hand. Several boards being pinned together, enough to make a head, the whole is first smoothed on one side and dressed to a uniform thickness; then it is clamped between two disks, and as these disks turn, a saw trims the head into a circle with a beveled edge; if the wood is green, an oval form may be given to provide against shrinking.

The barrel has next to be "set up." A sufficient number of staves are set into a frame, their edges refitted if necessary; stout iron hoops, called "truss hoops," pushed up from below grasp the lower ends tightly, and the whole may be lifted from the mold. One end of the barrel is formed, but the other is open and flaring. A rope is passed about the open end and taken to a windlass, and the staves are drawn together by tightening the rope; in this stage the barrel is heated to cause the staves to yield more easily to their required form. The barrel is now leveled by placing it upon a horizontal bed and bringing down upon it a powerful disk that presses upon its ends and forces the staves into their proper position. A machine is devised which trusses and levels the barrel at a single movement. The slack barrel stands in its truss hoops, two on each end; those of the lower end rest on strong supports; those of the upper end are seized by hooks whose handles pass down through the platform to a common lever; when all the parts are in place, powerful machinery pulls the upper trusses down, at once driving the barrel into the lower trusses, drawing together both ends, and leveling the whole. Each end of the shell, thus made, passes under a rotary cutter which forms a *croze*, or groove, to receive the head, and chamfers, or bevels, the ends of the staves. The heads

are put in, and the hoops set by hand. The barrel is then made to turn under a smoothing tool and rapidly finished.

BARREN, a co. in s. Kentucky; 500 sq.m.; pop. '70, 17,780—3623 colored; the soil is fertile, producing cereals and tobacco. Co. seat, Glasgow. The name comes from "barrens," applied to large tracts that are sparsely timbered.

BARRETT, BENJAMIN FISK, b. Me., 1808; a graduate of Bowdoin, and of Cambridge divinity school; pastor of the First New church (Swedenborgian) of New York, 1840-48, and in Cincinnati, 1848-50; subsequently over a Philadelphia society. His works are *Life of Swedenborg*, *Lectures on the New Dispensation*, *Letters on the Divine Trinity*, *The Golden Reed*, *A New View of Hell*, etc.

BARRI, GIRALDE. See GIRALDUS CAMBRENSIS, *ante*.

BARRIE, a t. in Canada, capital of Simcoe co., 60 m. n.n.w. of Toronto, at the w. end of lake Simcoe. It has manufactories of woolen goods; pop. '71, 3398.

BARRINGTON, DAINES, 1727-1800; third son of John Shute; antiquary and naturalist. He followed the law, and wrote *Observations on the Statutes from Magna Charta to 21st James I., being a Proposal for Remodeling them*, a work of high reputation. In 1771, he published *Orosius* in English, with king Alfred's Saxon version; and two years later, *Tracts on the Probability of Reaching the North Pole*. Among his most curious productions is *Experiments and Observations on the Singing and Language of Birds*.

BARRON, a co. in n.w. Wisconsin, on the upper streams of Red Cedar and Hay rivers; 1080 sq.m.; pop. '75, 3337. It is for the most part covered with forests. Productions, agricultural. Co. seat, Barron.

BARRON, JAMES, 1768-1851; b. Virginia; commodore in the United States navy and son of a commodore of the same name. B. commanded the *Chesapeake* when the British ship *Leopard* undertook to search her for deserters, Jan. 22, 1807. B. resisted, but his vessel was in no condition to fight, and he was compelled to surrender. This act precipitated war with England. B. was suspended and tried on various charges, but not convicted. After some years spent in merchant service, he sought restoration to the navy, but found many of the officers opposed to him, among them Decatur, whom B. challenged, and they fought at Bladensburg, Mar. 23, 1820. At the first shot both fell; Decatur died in a few hours, and B. recovered some months later. In late life B. was in office on shore duty, and was offered but declined the command of the Pacific squadron. At his death he was the oldest naval officer of the United States.

BARRON, SAMUEL, 1763-1810; b. Virginia, brother of James. He was conspicuous in the war with Tripoli, but in consequence of ill health resigned his command in favor of commodore John Rogers. Just before his death B. was made commander of the Gosport navy yard.

BARRON, SAMUEL, b. Virginia; an American naval officer who went over to the confederacy in 1861. He was in the *Brandywine* when she took Lafayette to France in 1825, and became captain in 1855. When Fort Hatteras was taken, Aug. 29, 1861, B. was made a prisoner, but exchanged in 1862, and went to England to fit out privateers. After the war he engaged in farming in Virginia.

BARROWS, ELIJAH PORTER, S.T.D.; b. Conn., 1805; a graduate of Yale; pastor of the First Presbyterian church in New York, 1835; professor of sacred literature in Western Reserve college, 1837-52; professor of Hebrew language and literature in Andover theological seminary, and afterward in Oberlin theological seminary. He is the author of *Companion to the Bible*, *Sacred Geography and Antiquities*, and has published many essays in religious periodicals.

BARRUN'DIA, JOSÉ FRANCISCO, 1780-1854, a Guatemalan statesman, early opposed to Spain, and in 1813 sentenced to death for treason. He escaped, hid for six years in the mountains, headed a party of revolutionists, and continued conspicuous through the war for independence. He was president of Guatemala in 1829, and again in 1852. In 1854, he came to the United States as minister from Honduras, with the purpose of procuring the annexation of that territory to the American union, but died from apoplexy soon after his arrival.

BARRY, a co. in s.w. Michigan, traversed by a branch of the Michigan Central railroad; 576 sq.m.; pop. '74, 22,051; in '80, 25,320. The surface is undulating prairie and woodland, dotted with small lakes. Cereals and dairy produce are the staples. Co. seat, Hastings.

BARRY, a co. in s.w. Missouri, on the Arkansas border; drained by White river; 703 sq.m.; pop. '70, 10,373—53 colored; in '80, 14,498. It produces cereals and tobacco. Co. seat, Cassville.

BARRY, EDWARD MIDDLETON, b. 1830, an English architect, pupil of his father, whom he succeeded as architect of the houses of parliament. He is the architect of the new Covent Garden theater, the Charing Cross, and Star and Garter hotels, and of the new national gallery.

BARRY, JOHN, 1745-1803; b. Ireland; came to America about 1760; one of the earliest American naval officers. In 1776, in command of the *Lexington*, 14 guns, he

captured the tender *Edward*, the first ship ever taken by a commissioned officer of the U. S. navy. In 1781, while returning from France in the *Alliance*, he captured two vessels, being severely wounded in the conflict. He was the first senior officer with the rank of commodore on the establishment of the present navy.

BARRY, WILLIAM FARQUHAR, b. New York, 1818; col. of artillery and brevet brig.gen. of the U. S. army; was in the Florida Indian war, and aid to gen. Worth in the Mexican war. In the rebellion he was chief of artillery of the army of the Potomac, and participated in a number of battles and in the siege of Yorktown. In 1867, he was made commander of the artillery school at Fortress Monroe, where he remains.

BARS, a province in n.w. Hungary around the head streams of the Danube. It is mountainous, but rich in gold, silver, and other minerals. The mines of Skleno and Vihnye are the most remarkable. The chief towns are Kremnitz and Nuesohl. Pop. '69, 137,191, mainly Roman Catholics.

BARSUMA, or BARSUMAS I., a Nestorian bishop of the 5th c., who induced the king of Persia to expel the Christians who followed the Greek fathers and to put Nestorians in their place. He founded the school at Nisibis, which sent missionaries to various countries. He married a nun, and maintained the right of all priests to marry. In Persia the Nestorians venerate him as the founder of their faith.

BARTH, or BARDT, a t. in Pomerania, on the river B., 17 m. w. of Stralsund; pop. '71, 5774. It was once the residence of the dukes of Pomerania, and from 1630 to 1815 belonged to Sweden.

BARTH, CHRISTIAN GOTTLÖB, 1799-1862; a German philanthropist and pastor, especially devoted to missionary work. He founded a school for the training of poor children. His Bible history and Bible stories have had an immense circulation.

BARTHOLOMEW, a co. in s.e. Indiana, intersected by the Jeffersonville, Madison, and Indianapolis railroad; 375 sq.m.; pop. '79, 21,133; level in the e. and hilly in the w.; produces cereals, butter, and wool. Co. seat, Columbus.

BARTHOLOMEW, EDWARD SHIEFFIELD, 1822-58; b. Conn. He was first a dentist, then a painter, and lastly a sculptor. Among his productions are "Youth and Age," "The Shepherd Boy," "Ganymede and the Eagle," "Eve after the Fall," and a monument to Charles Carroll.

BARTHOLOMEW BAYOU, a channel or outlet beginning in Arkansas and running in a very crooked course to Washita river in Louisiana; navigable 200 m. for steamboats.

BARTLETT, ELISHA, 1805-55; b. R. I.; a physician, graduated at the medical department of Brown university; lecturer on pathological anatomy; professor in Transylvania (Ky.) college, and in the universities of Maryland and New York, and professor of materia medica, etc., in the New York college of physicians and surgeons. He wrote *Essay on the Philosophy of Medical Science, Fevers of the United States*, and a volume of verses from subjects in Dickens' novels. He was also editor of the *Monthly Journal of Medical Literature*.

BARTLETT, ISHABOD, 1786-1853; b. N. H.; a lawyer of Portsmouth, N. H., educated at Dartmouth; was in the state legislature and in congress. He was a conspicuous forensic opponent of Daniel Webster and Jeremiah Mason.

BARTLETT, JOSEPH, 1762-1827; b. Mass.; a lawyer of Massachusetts, graduate of Harvard; author of *The New Vicar of Bray*, and other satirical verses. His life was remarkable. He visited England, fell to gambling, was put in prison, wrote a play to secure his release, and went upon the stage. He came back with a great quantity of goods procured on credit, and was wrecked on cape Cod. Then he went into law business and politics, and was elected to the legislature.

BARTLETT, JOSIAH, 1729-95; b. Mass.; a self-educated physician, beginning practice in New Hampshire, where he successfully introduced the use of Peruvian bark. He was in the legislature from 1765 until the revolution. He was a member of the committee of safety, a justice of the peace, colonel of a regiment, delegate in congress, the first member to vote for the declaration of independence, and the first (after John Hancock, the president) to sign that document. He was judge of the common pleas, justice of the supreme court, and chief justice. He was a member of the state convention called to adopt the federal constitution, and the first governor of New Hampshire under its first constitution. He was president of the New Hampshire medical society, and always the friend and patron of learned men.

BARTLETT, SAMUEL COLCORD, D.D., LL.D.; b. N. H., 1817; graduate of Dartmouth, and of Andover theological seminary; professor of intellectual and moral philosophy in Western Reserve college, and of Biblical literature in Chicago theological seminary; Congregational pastor in various places; at present (1880) president of Dartmouth college. He is known as a vigorous writer in support of the old forms of doctrine. He has traveled in the east, and has published, besides many essays, *Sketches of the Missions of the American Board*, *Life and Death Eternal*, and special articles for Smith's *Dictionary of the Bible*.

BARTLETT, WILLIAM, 1748-1841; b. Mass.; a philanthropist who accumulated a large fortune in trade. He contributed \$30,000 toward the founding of Andover theological seminary, and distributed more than a quarter of a million to mission- and other benevolent objects.

BARTLETT, WILLIAM FRANCIS, b. Mass., 1840; graduated at Harvard; served with conspicuous honor in the civil war from private to brevet maj.gen. of volunteers; lost a leg at the siege of Yorktown; was wounded at Port Hudson, and the battle of the Wilderness, and once more while leading an assaulting column near Petersburg, when he was taken prisoner. He died, greatly lamented, Dec., 1876.

BARTOL, CYRUS AUGUSTUS, D.D., b. Me., 1813; graduate of Bowdoin college, and of Cambridge divinity school, and became a Unitarian preacher, pastor of the West church, in Boston. In doctrine he ranks among the radicals of his denomination; in style he is clear and picturesque. He has published *Discourses on the Christian Spirit and Life, Christian Body and Form, Pictures of Europe, Radical Problems, The Rising Faith*, and many essays.

BARTOLI, DANIELE, 1608-85; a native of Ferrara, educated a Jesuit, and commissioned to write a history of the order, which he did in an elaborate work, treating especially of Christianity in Japan, and other parts of the east. He also wrote a history of the English Roman Catholics, the life of Loyola, several other biographies, books of religion and morals, on physical phenomena, grammar, etc.

BARTOLO, or BARTOLI, TADDEO DI, 1390-1414; an Italian painter whose works are found at Padua, Pisa, and Volterra, with some remarkable frescoes in the chapel of the plaza at Sienna.

BARTOLOMME'O, FRA. See BACCIO DELLA PORTA, *ante*.

BARTOLUS, OSSO, or BARTOLUS DE SAXO FERRATO, 1314-57; professor of civil law in the university of Perugia, and the most famous master of the dialectical school of jurists. He won great reputation by his lectures and writings; among the latter, treatises *On Procedure, On Evidence, and Commentary on the Code of Justinian*. His magnificent monument in the church of San Francisco bears simply his name.

BARTON, a co. in central Kansas; 1332 sq.m.; pop. '78, 8251; in '80, 10,768. The co. is intersected by the Arkansas river, and by the Atchison, Topeka and Santa Fe railroad; surface undulating and soil productive. Co. seat, Great Bend.

BARTON, a co. in Missouri on the Kansas border; 600 sq.m.; pop. '70, 5087; in '80, 10,142. It is chiefly forest and prairie, with fertile soil, producing corn, wheat, and live stock. Coal and limestone are found. Co. seat, Lamar.

BARTON, BENJAMIN SMITH, 1766-1815; a native of Pennsylvania; educated at Philadelphia, and in Germany; graduated at Göttingen; professor of natural history, botany, and materia medica in Pennsylvania college. Besides many papers in the philosophical and medical journals, he published *Observations on Some Parts of Natural History, New Views of the Origin of the Tribes of America, Elements of Botany, Collections towards a Materia Medica of the United States*, and other medical works.

BARTON, CLARA, b. Maine. She was a teacher in early life, and founder of various free schools in New Jersey. In 1854, she had a clerkship in Washington, but resigned at the beginning of the war of the rebellion and went into hospital service. After peace she originated and carried on at her own cost a systematic search for missing soldiers. Going to Europe for her health, she was assistant to the grand duchess of Baden in establishing hospitals in the Franco-German war, followed the German army, and was honored with the golden cross of Baden and the iron cross of Germany.

BARTON, WILLIAM, 1747-1831; a native of Rhode Island; and a col. in the revolution. On the night of July 10, 1777, he led a small party across Narragansett bay, passed unobserved by three British war vessels, and near Newport captured the English gen. Prescott. For this act congress gave him a sword, a colonel's commission, and a tract of land in Vermont. He was for many years in prison for debt in Vermont, but was released through the influence of gen. Lafayette, who paid the claim on which he was held.

BARTON'S BUTTONS, exceedingly minute lines engraved on metal by a dividing engine, which produce a surface reflecting various colors. These fine lines are stamped from dies on buttons, etc., which rival gems in brilliancy. John Barton was the inventor.

BARTOW, a co. in n.w. Georgia, intersected by the head waters of the Coosa river, and by the Western, and Atlantic and Rome railroads; 550 sq.m.; pop. '70, 16,566—6774 colored; in '80, 18,672. It is hilly, with fertile soil, producing grain, cotton, and wool; has mines of copper, lead, marble, and limestone. Co. seat, Cartersville.

BARTRAM, JOHN, 1699-1777; a Pennsylvanian farmer, who became, according to Linnæus, "the greatest natural botanist in the world." He visited many sections of the present United States, collecting trees and plants for European gardens, for which the botanists of the time repaid him in books and apparatus. On the Schuylkill near Philadelphia he established the first American botanical garden, and was a member of several foreign societies. He published *Description of East Florida, with a journal*.

BARTRAM, WILLIAM, 1739-1823; a native of Pennsylvania, son of John, and like him a botanist, though he declined a professorship on account of imperfect eye-sight. He settled in Florida and wrote *Travels Through North and South Carolina, East and West Florida, and the Cherokee Country, and Observations on the Creek and Cherokee Indians*. He made the most comprehensive list of American birds, previous to that of Wilson, with whom he was a co-laborer.

BARTSCH, JOHANN ADAM BERNHARD, VON, 1757-1821; a German engraver of superior acquirements, member of the academy of fine arts, and director of the imperial collection of engravings; author of *La Peintre-graveur*, in 21 vols., a *Catalogue of the works of Rembrandt*, and other catalogues. He produced more than 500 plates of his own.

BARYE', ANTOINE LOUIS, b. 1795; a French sculptor, and teacher of the art of designing subjects in natural history. He produced allegorical, mythological, and historical works; statues of public men; "Amazon" and "Angelica," modeled from his two daughters; and many other figures remarkable for accurate physiological construction. He also produced many figures of animals in action, such as a lion crushing a boar, and a tiger killing a goat. He was a chevalier and officer of the legion of honor, member of the academy, etc.

BASARJIK, HAJEE-OGLOO-BAZARJEEK (Turkish, "market-town"). One in c. Bulgaria, 25 m. n. of Varna, has 5000 inhabitants, and an annual fair. It was twice taken by the Russians, 1774 and 1810. Another, called TARTAR B., is in the government of Adrianople, on the Maritza; pop. about 5000, one fourth Christians. Trade in rice is the main business.

BASCOM, HENRY BIDLEMAN, D.D., LL.D., 1790-1850; b. N. Y.; bishop of the Methodist church (south). He was licensed to preach before he was 18 years of age, and began in the Ohio conference; was transferred to Tennessee, and in 1823 was chosen chaplain to congress at the solicitation of Henry Clay. In 1827, he was president of Madison college; 1829-31, agent of the American colonization society, and professor of moral science in Augusta college (Ky.), remaining until 1841; the next year becoming president of Transylvania college (Ky.). He was the writer of the protest of the Southern delegates in the general conference against the action of that body in the case of bishop Andrews, and afterwards a leader in the organization of the southern branch of the church. He was prominent in all questions before the church; was editor of the *Quarterly Review*, and published *Methodism and Slavery*, and a great number of sermons. In the pulpit he was eloquent and impassioned.

BASCOM, JOHN, D.D., LL.D., b. N. Y., 1827; a graduate of Williams college and of Andover theological seminary, and professor of rhetoric in the former. He has published *Political Economy, Treatise on Aesthetics, Elements of Psychology, Science, Philosophy, and Religion*, etc. His style is elaborate, though clear, and his thought profound. He is president of the university of Wisconsin, at Madison.

BASE-BALL, GAME OF, is sometimes said to be the national field-game of the United States, holding the same position in this country as cricket in Great Britain; it has, moreover, the advantage of being a more spirited pastime and far more interesting both to players and to spectators. The average time of a base-ball match is from 2 hours to 2½ hours, whereas a cricket match may extend to 3 days, and then remain undecided. Base-ball was founded on the old English game of "rounders," but bears hardly any resemblance to it in its present form. The first regular B. B. society, called the "Knickerbocker club," was founded at New York in 1845. In 1857, the popularity of this game had increased to such an extent that a national association of base-ball players was formed out of the Knickerbocker, Gotham, Eagle, Empire, Baltic, and Harlem clubs of New York; the Putnam, Excelsior, Atlantic, Eckford, and Continental clubs of Brooklyn, and the Union of Morrisania, all of which were founded between 1845 and 1856. Prior to 1857, the club that was the first to score 21 aces, or runs, was declared winner of the game, but the national association decided to award the victory to the club that scored the largest number of runs, after each side had played 9 innings. The war of the rebellion was a serious interruption to all sport of this character, but in 1865, base-ball began to regain its popularity and to be studied as a profession by many who devoted to it their whole time and energy, becoming experts and receiving pay. It naturally followed that base-ball players were classified as either professionals or amateurs, and that the latter could not be expected to play with the same degree of excellence as the former; the amateurs, therefore, broke up the old association and founded, in 1871, the national association of amateur base-ball players. The other class organized the national association of professional base-ball players, which gave way in 1876 to the league association of professional clubs. In the summer of 1874, the Boston base-ball club and the Athletic club of Philadelphia sailed for Europe, to play a series of exhibition matches in England and Ireland, and caused much surprise at their skill in the game of cricket, acquired by their training as base-ball fielders. From 1871 to 1876, the Boston club, called "Red Stockings," held the championship pennant of the league association of professional clubs.

The ground chosen for a game of base-ball should be a clear, level piece of turf, not less than 500 by 300 ft.; a square of 90 ft. is then marked out by locating its diagonals,

and a base is placed at each angle; the home base at the upper point, the second base at the lower point; standing on the home base and looking down the ground, the apex of the triangle on the right hand is the center of the first base, and the apex of that on the left hand the center of the third base. Forty-five feet from the front angle of the home base is then to be measured down the diagonal of the square, in order to fix the center of the pitcher's position, which is 6 ft. square. Lastly, the lines which join the home with the first and third bases respectively, are prolonged, and posts, called foul-ball posts, are set on these lines not less than 100 ft. from the centers of the first and third bases. A ball is fairly hit if it first touches the ground, a player's person, or other object, on or in front of the foul-ball lines. There are nine players on a side, and the theory of the game is that one side takes the field and the other side goes to the bat; the positions of those in the field are as follows: The pitcher stands on his square facing the batsman at a distance of 45 ft. from the home base. The catcher stands at an optional distance behind the batsman at the home base, and a man is placed near behind each of the other three bases. The short-fielder is between the second and third bases, behind the pitcher, as a general backer up of the in-field. The out-fielders are in the left, center, and right fields, at some distance behind the second base, to catch the balls and return them to the pitcher or the base men. One of the nine generally acts as captain, stationing and giving directions to his men during the game. After the choice of first innings has been settled by a toss, the pitcher delivers the ball to the batsman by a toss, a jerk, or an underhand throw. If the batsman hits the ball and it is not declared a foul by the umpire, he must endeavor to reach the first base, and afterwards, as occasion offers, the second, third, and home bases. But if, before the batsman can reach a base for which he is running, a fielder, holding the ball, touches that base, or the person of the runner; or if the ball, hit by the bat, is caught before touching the ground; or if a foul ball be caught after touching the ground but once; or if, after the batsman has struck at the ball three times in vain, he fails to touch the first base before the ball is legally held there—he is declared out by the umpire. After a batsman has reached the first base he is not compelled to leave it until the next batsman has struck a fair ball. A run is scored when a base-runner reaches the home base after touching the others in numerical order; if three players of the side are out before the runner makes all his bases, he fails to score. The umpire must be thoroughly conversant with the game, and all the minutiae of the rules. He is the sole arbiter of every point of play; whether pitching, catching, fielding, striking, or running. The catcher's duty is to catch all balls pitched to the batsman. The pitcher holds the most difficult position of the field side. His tactics are to deceive the batsman as to where a ball is coming, and he must be able to catch any balls hit straight at him. The first, second, and third basemen must all be sure catchers, swift and accurate throwers, and good judges of which base to send the ball to, in order to put an opponent out. The right, center, and left fielder must all be sure catchers, good long-distance throwers, and active runners. The ball must weigh not less than 5 or more than $5\frac{1}{4}$ ozs., avoirdupois; must not be less than 9 or more than $9\frac{1}{4}$ in. in circumference, and be composed of 1 oz. avoirdupois of vulcanized india-rubber, covered with worsted and leather. The bat must be of wood, a round stick suitable for handling and striking, and 42 in. long. The bases must be 1 ft. square. No game can be scored unless 5 innings have been concluded on each side, and no game can be drawn unless the play is stopped by darkness or the weather when the scores of the two sides are even. A ball which hits the bat without being struck at, or hits the person of the batter or umpire, is a dead ball, and out of play. The foul-ball lines are unlimited in length, and extend in a straight line from the front angle of the home base, through the centers of the first and third bases respectively. A ball is fairly hit if it first touches the ground, a player's person, or other object, on or in front of the foul-ball lines.

The eight clubs which represent the league this year (1880) are Chicago, Cincinnati, Cleveland, Buffalo, Boston, Providence, Worcester, and Troy.

BASEDOW'S DISEASE, GRAVES' DISEASE, or EXOPHTHALMIC GOITRE, a disease characterized by palpitation of the heart, enlargement of the thyroid glands, anæmia, and prominence of the eyeballs; caused, according to some authorities, by paralysis of the vasomotor nerves. It is seldom incurable or dangerous.

BASHKIRS, or BASHKURTS; a people in Orenburg and Perm, Russia, on the slope and plains of the Ural. They are a mixture of Finns, Tartars, and Ostyaks. Until the arrival of the Hungarians, about the middle of the 13th c., the B. were strong and independent, and troublesome to their neighbors. In 1556, they voluntarily accepted the supremacy of Russia, and the city of Upha was founded to defend them from the Kirghiz. Three times they rebelled, in 1676, 1707, and 1735, but were reduced to subjection. They are now divided into 13 cantons, under the jurisdiction of the gov.gen. of Orenburg. They maintain a military cordon, escort caravans through the Kirghiz steppes, and are employed in various other services. They are divided into settled and nomadic, the former chiefly agriculturists, and the latter cattle raisers. They are hospitable, but suspicious, poor, apt to steal, and exceedingly lazy. They have large heads, small foreheads, eyes narrow and flat, ears standing straight out, and black hair; but are muscular and strong, and capable of enduring much labor and privation. They are of limited intellect, and their Mohammedanism is rather a profession than a practice.

BASIL II., 958-1025; emperor of the east. He and his brother Constantine were kept from the throne by their stepfather, Phocas, until 976. Constantine left the government to B., who had a stormy reign and almost constant war. He suppressed a formidable revolt, defeated the attempt of the emperor of Germany to seize certain Italian districts, and had several conflicts with the caliphs of Bagdad and the Sicilian Arabs. In 987 war began with Bulgaria, and continued with brief interruptions nearly 20 years, when Bulgaria became thoroughly subdued. After one of the hard earned victories in this war, B. ordered the eyes of 99 in every 100 of 15,000 prisoners to be put out, the one spared having to guide his blind companions back to Bulgaria. When the cries of those tortured men were heard by the Bulgarian king, he was so shocked that he died three days afterwards.

BASILE'AN MANUSCRIPTS, two valuable MSS. of the Greek Testament now in the public library of Basle. I. A copy of the four gospels entire except that Luke iii. 14-15, and xxiv. 47-53 are wanting, and that Luke i. 69, ii. 4, xii. 58, xiii. 12, and xv. 5-20 are by a different hand. It is written in uncial letters, round and full, with accents and breathings. Each page contains only one column with the Ammonian sections; and, instead of the Eusebian canons, there are references at the foot of each page to the parallel sections of the other gospels. There are indications of its having been used as a church MS. at Constantinople and it is a good specimen of the class of texts derived from that city. It seems to belong to the 8th c., and the additions to the 9th century. It was presented to a monastery at Basle, in the 15th c., by cardinal Ragusio. It has been collated by several of the best critics, but has never been published. II. A MS. of the entire Greek Testament except the Apocalypse, also presented to the monks of Basle by cardinal Ragusio. It is written in the cursive characters and different parts of it are of very unequal value. The text of the acts and epistles is of slight importance, but that of the gospels is very remarkable and adheres closely to the oldest uncials. There are 38 lines on a page; the writing is excellent, with accents, breathings, *iota subscripts*, and some illuminations. It is assigned to the 10th c., and seems to be the source from which codex 118 of the Bodleian library was copied.

BASIL'IAN MANUSCRIPT, an uncial copy of the Apocalypse found among ancient homilies of Basil and Gregory of Nyssa. It is named from the Basilian monastery at Rome, to which it formerly belonged. It is now deposited in the Vatican library. Tischendorf, in 1843, was allowed to make extracts from it, and having compared its whole text with a Greek Testament, published the result, which Tregelles afterwards had the opportunity to compare again with the manuscript, and to correct. The letters are simple and unornamented, holding a middle place between square and oblong. The breathings and accents are by the first hand. It probably belongs to the early part of the 8th century.

BASIL'IAN MONKS, or MONKS of ST. BASIL; an order founded by St. Basil in the 4th c.; it grew to 90,000 in number before the death of the founder. The principal monastery now is at St. Saviour, in Messina. They are numerous in Spain, Italy, and Sicily, and the greater portion of the monks of the Greek church in Russia are of the order. Their records show that the order has furnished 14 popes, many cardinals, and nearly 12,000 martyrs.

BASILIS'CUS, d. 477, Emperor of the East. In 468 A.D. he commanded the armament that Leo I. sent against Genseric, who defeated him. B. seized the throne of the east in 474, but was deposed two years later by Zeno.

BASILOSAURUS. See ZEUGLON.

BASKET FISH, a species of the genus *astrophyton*, or star-fish, having a most remarkable development of arms. Its body is a five-sided disk, surmounted by the numerous arms. The disk (in one specimen measured) has a diameter of 2½ in.; and one of the arms is, in its entire length, 9 in., but as it lies coiled up, like a basket, it is about 8 in. across the whole. The size varies with age, but the above is about the average, many being less than half as large, and others twice as great. The upper side of the disk has 10 radial ribs bearing short, blunt spines. The mouth is on the under side, and central. It is set with spiniform bristles hiding 24 thorn-like teeth. From around the star-shaped mouth branch 5 stout arms, each of which is divided at the edge of the disk. The animal is wholly covered with an epidermis, granulated above, but smooth beneath, except that it seems to have a double line of stitches under each arm. The general color is light buff; but the inter-brachial spaces in the living animal vary from dark purple to bright pink. The constant division of each arm at regular intervals into 2 smaller ones is a most remarkable peculiarity. Each of the 5 main branches is divided into 2, making 10 in all; each of the 10 is divided, making 20—and so indefinitely down to the least visible filament. Winthrop counted 81,920 of these "small sprouts, twigs, or threads." On capture or disturbance the creature instantly folds its arms closely about its body, shrinking from the touch like a sensitive plant, and assuming the basket shape from which it gets its familiar name. The attempt to untwist these coils generally ends in breaking the delicate, but tenacious threads. The basket fish is a voracious feeder, and its peculiar construction aids it in taking its prey. The microscope shows each arm and spine to terminate in a minute but sharp hook.

The animal, in moving, lifts itself on the extreme end of its long arms, standing, as it were, on tiptoe, so that "the ramifications form a kind of trellis-work all around it reaching to the ground, while the disk forms the roof." This latticed bower is but a trap for entangling heedless little fishes and shrimps, whose escape from those coils is as hopeless as the efforts of a fly to break loose from a spider's web.

BAS-RHIN, now a part of the German territory of Alsace-Lorraine; but once a department of France.

BASS, *Labras*, a family of fresh-water and sea fishes, abundant in the United States. The sea-bass, *centropristis nigricans*, never comes into fresh water. Its general color is blue black, and the black edges of the scales give its surface a netted appearance; fins pale blue, the anal and dorsal spotted with darker. Teeth are set over all the bones of the mouth. Its weight is very rarely as much as 17 lbs. The striped bass, *labras lineatus*, is the rock fish of the Delaware and Potomac. Color, bluish brown above, silvery below, with seven stripes of chocolate brown. This fish in spring pursues the smelt into shallow water, and devours the spawn of the shad. Its weight reaches 50 to 70 lbs.; it is excellent food, and furnishes choice sport for the angler. A variety which has the lateral bars broken into spots is *L. notatus*, or the bar-fish. The black bass of the lakes, *grystes nigricans*, is blue-black, marked with darker bandings. It frequents all western waters from the St. Lawrence to the Mississippi. Its weight runs to 8 lbs. It is a favorite both before and after it is caught. The Oswego bass, *G. megastoma*, often confounded with the black bass, is distinct by the greater size of its mouth. It is taken in the shallow waters of lake Erie. The white bass, *G. multilineatus*, or white perch, abounds in all the upper lakes. The grass bass, *centrarchus hexacanthus*, is found in company with the Oswego bass. Its weight rarely exceeds 2 lbs. The rock bass, *C. æneus*, is dark copper yellow, with darker clouds; fins bluish green. It is common in the St. Lawrence, in the canals, and in the Hudson. The growler, *grystes salmonus*, is the white salmon of the southern states. Color, deep bluish green, with 25 or 30 longitudinal dark bands.

BASS, or BASSWOOD. See LIME, or LINDEN.

BASS, EDWARD, D.D., 1726-1803; b. Mass.; graduate of Harvard; ordained in England by bishop Sherlock in 1752, and in 1797 consecrated first Protestant Episcopal bishop of Massachusetts, his diocesan functions being afterwards extended over New Hampshire and Rhode Island.

BASSANO, HUGUES BERNARD MARET, Duke of, 1763-1839; a French statesman. At the commencement of the revolution he edited the *Bulletin* (the original of the *Moniteur*), containing the proceedings of the constituent assembly, a position which gave him much political influence. In 1791, he was at the head of a bureau in the ministry of foreign affairs, and was sent to England to re-establish suspended diplomatic relations, but he was unsuccessful. In 1793, he was appointed ambassador to Naples, but while on his way was captured by the Austrians, and kept two years a prisoner, being finally exchanged for the daughter of Louis XVI. In 1797, he was one of the negotiators of peace with England. Bonaparte employed him as his private secretary, and he afterwards became secretary of state, in which position he managed the newspapers and exercised great influence over Napoleon, assisting in all his diplomatic business. In 1811, he had direction of foreign affairs; Napoleon made him duke of B., and retained him as his most intimate adviser. He was in exile during the restoration, but Louis Philippe restored him to the peerage in 1831, and for a short time he acted as president of the cabinet.

BASSARIS, a genus of animals in North America representing the civet of Europe. They are about as large as common cats, and may be easily tamed. They live in trees, and catch birds, mice, etc. The tail is bushy, and marked with rings like that of the raccoon.

BASSES-ALPES, a department of France on the Italian border, 2685 sq.m.; pop. '76, 136,166. It is sparsely populated, only 20 persons to a square kilo; watered by the Durance; mountainous, with good pasturage, and famed for raising plums. Chief town, Digne.

BASSES-PYRÉNÉES, a department of France bordering on Spain and the bay of Biscay; 2943 sq.m.; pop. '76, 431,525. The rivers are the Nive, the Odour, and the Bidouze. About half the surface is marshy. There are mineral springs of value, and much industrial activity; trade is carried on through the city and port of Bayonne. Capital, Pau.

BASSI, LAURA MARIA CATERINA, 1711-78; an Italian lady of Bologna, distinguished for learning. She received a doctor's degree, and was made professor in the philosophical college, where she lectured on experimental philosophy until her death. She was a member of many societies, and conducted an extensive correspondence with eminent men of learning; was well acquainted with the classics, and also with the literature of Italy and France. In 1738 she married Dr. Guiseppe Verratti.

BASS ROCK, an island of stone near the firth of Forth, Scotland, about a mile in circumference, and 400 ft. high, traversed by a cavern. The rock is accessible only on

the s.w. side. It is a favorite haunt of aquatic birds. Charles II. bought the B.R. for a prison for Covenanters; and a few partisans of James II. held it nearly three years against frequent attempts at capture by large bodies of Protestants.

BASSUTOS, a tribe of the Bechuanas in s. Africa, estimated 100,000 in number. They have made some progress in agriculture and civilization under the influence of French missionaries. In 1866, the B. were obliged to cede a part of their territory to Orange Free state, and in 1868 the remainder was united with Natal.

BASTIAN, HENRY CHARLTON, b. England, 1837; an eminent physician and physiologist. He was admitted to the royal college of surgeons in 1860; was assistant curator in the museum of university college, London, 1860-63; professor of pathological anatomy in the same college, 1867, and in 1871 physician to the university college hospital. He has published *The Modes of Origin of Lowest Organisms*, *The Beginnings of Life*, and many contributions to medical and philosophical journals. He is recognized as an authority in the pathology of the nervous system. He has carefully studied the modes of origin of the lowest forms of life, and is now foremost in the school of heterogenists, or believers in the theory of spontaneous generation.

BASTROP, a co. in central Texas, intersected by the Colorado river and the Houston and Central Texas railroad; 880 sq.m.; pop. '70, 12,290—5233 colored; in '80, 17,135. The surface is undulating and fertile; corn and cotton are the principal crops. There is abundance of lignite coal. Co. seat, Bastrop.

BATAK. See **BATTAS**, *ante*.

BATA'VIA, a village and township in Kane co., Ill., 39 m. w. of Chicago, with which it is connected by the Chicago, Burlington and Quincy, and the Chicago and Northwestern railroads; pop. '70, 3018. It has a private insane asylum, manufactories, and valuable quarries.

BATA'VIA, a village and seat of justice of Genesee co., N. Y., 36 m. e. of Buffalo; with railroad connections to all points; pop. of village and township '75, 7067. It has the state institution for the blind, a ladies' seminary, a library, and several manufactories.

BATCHIAN, or **BATJAN**. See **BATSHIAN**, *ante*.

BATEMAN, KATE JOSEPHINE, an American actress, b. Maryland, 1842. With her sister Ellen she appeared on the stage almost in infancy, and exhibited unusual talent. In 1861, she began her adult career in New York in *Julia*, *Pauline*, *Juliet*, etc., and in the next year made a remarkable success in *Leah*. She played in several American cities and then in England, having the management of a theater in London, and accumulating fame and fortune. In 1866, she became the wife of George Crowe, an English physician.

BATES, a co. in w. Missouri, on the Kansas border; traversed by the Missouri, Kansas, and Texas railroad, and intersected by Osage river; 900 sq.m.; pop. '70, 15,960—320 colored; in '80, 25,080. It is a prairie region, producing grain, tobacco, and cattle. There are beds of coal and carboniferous limestone, and plenty of timber. Co. seat, Butler.

BATES, BARNABAS, 1785-1853; b. England; advocate of cheap postage in the United States; Baptist minister in Rhode Island; established the *Christian Inquirer* in New York, and while assistant in the post-office there, he became interested in the reduction of postage. After many years of writing and speaking, his object was achieved in respect to land postage.

BATES, EDWARD, LL.D., 1793-1869; b. Virginia; an early settler and lawyer in Missouri, member of the legislature, of the constitutional convention, and representative in congress. He was an unsuccessful candidate for president in the convention that nominated Lincoln in 1860, and was attorney-gen. in Lincoln's first cabinet.

BATES, JOSHUA, 1788-1864; an English banker, b. in Massachusetts. He established a house in London in connection with John Baring, son of sir Thomas Baring, and subsequently went into the firm of Baring Brothers. He gave \$50,000 towards founding the Boston public library. His only child is Madame Van de Weyer, the wife of a Belgian diplomatist.

BATES, WILLIAM, D.D., 1625-99; an English non-conformist divine, one of the commissioners for reviewing the public liturgy, and one of those concerned in drawing up the exceptions to the book of common prayer. He was appointed chaplain to Charles II., and became minister of St. Dunstan's, but was deprived of his benefice for non-conformity. He published in Latin, *Select Lives of Illustrious and Pious Persons*; other works appeared after his death.

BATH, a co. in n.e. Kentucky, on the Licking river; 220 sq.m.; pop. '70, 10,145—1702 colored. It has abundance of iron and coal, and several medicinal springs, and produces cereals and wool. Co. seat, Owingsville.

BATH, a co. in Virginia in the Alleghanies, on the West Virginia border; 725 sq.m.; pop. '70, 3795—889 colored. Its surface is hilly, with fertile valleys, producing wheat, corn, oats, and cattle, and there are medicinal springs of value. Co. seat, Warm Springs.

BATH, a city and port of entry in Maine, on the Kennebec, 4 m. below the junction with the Androscoggin, 12 m. from the sea and 35 m. s. of Augusta; the seat of justice of Sagadahoc co.; pop. '70, 7371. Ship-building is the main business, in which it ranks next after Baltimore. The harbor is never frozen, and being easily accessible it renders B. an important commercial place. It was incorporated as a town in 1780, and as a city in 1850. There is ample railroad connection in all directions.

BATH, a village in Steuben co., N. Y., 74 m. s.s.e. of Rochester on Conhocton creek; pop. of township, '75, 6704; in '80, 6779. It is the co. seat, and has an orphan asylum, court-house, and the New York state soldiers' home.

BATH, EARL OF. See PULTENEY, WILLIAM.

BATHOMETER, an instrument invented by C. William Siemens, for indicating the depth of the sea beneath a passing vessel. The density of sea-water is about 1.026, while that of solid earth or rock has an average of about 2.75. Hence, the attraction emanating from the water which lies beneath the ship, is less than that which would be exerted by earth or rock occupying the same relative position, and the greater the depth of the water, the greater the loss of attraction. Hence, further, the weight of a given mass of matter on board the ship will be greater when the ship is ashore than when afloat, by an amount which may be made appreciable by an instrument of sufficient delicacy, and this diminution of weight may become a recognizable function of the greater depth of water. Dr. Siemens fills with mercury a vertical steel tube of small bore, fitted below with a cup-shaped expansion closed with a corrugated steel-plate diaphragm. The pressure of the mercury upon the upper surface of the diaphragm is antagonized by a plate adjusted to bear upon the center of its under surface, and this plate is supported by steel spiral springs that are attached to the top of the column. In the construction of the instrument, care has been taken to compensate for the variations caused in the density of the mercury, and in the elasticity of the steel springs, by change of temperature. As the tension of the springs varies with their extension, while the pressure of the mercury on the diaphragm varies with the attraction from deep or shallow water, the two forces adjust themselves by a movement of parts, and the motion is so magnified by a micrometer screw, having an electric tell-tale, that the apparatus indicates a change of a fathom in depth of water for each division on the scale of the micrometer.

BATHS and WASH-HOUSES, PUBLIC (*ante*), are not established in the United States to any considerable extent except in some of the larger cities. In New York, Brooklyn, Boston, and some other places, there are large floating structures, with general and single dressing rooms, and an open space in the middle for swimming. There are separate baths, or separate days, for females, and the whole management is conducted and paid for by the city authorities. In 1879, there were four or five in the two rivers at New York; and during the hot season the bathers number many tens of thousands per day.

BATHURST, ALLEN BATHURST, Earl of, 1684-1775; an English statesman. He was sent to parliament, in 1705, and distinguished himself as a supporter of the union of England and Scotland. In 1711, queen Anne made him a baron, and he won further distinction in the upper house by impeaching the directors of the notorious South Sea scheme. B. was a determined opponent of Walpole, and when that minister was forced to resign, B. was made a member of the privy council. In 1757, he became treasurer to the prince of Wales, and when the prince became George III., B. still continued in the privy council, but on account of age took no further action in politics. Lord B. was a generous patron of literature, and such writers as Congreve, Vanburgh, Swift, Prior, Rowe, Addison, Pope, Arbuthnot, Gay, and others, were happy in his acquaintance. Pope dedicated his *Epistle on the Use of Riches* to Lord B., and complimented him in characteristic lines. B. received further elevation to an earldom in 1762, and lived to see his son a baron and lord chancellor of England.

BATHURST, RALPH, 1620-1704; uncle of lord B., an English physician, prelate, and wit. In medicine he rose to eminence, and in the time of the commonwealth was appointed physician to the state. After the restoration he abandoned medicine, took holy orders, was chaplain to the king, and afterwards dean of Wells. Later he was vice-chancellor of Oxford, and was offered the see of Bristol, which he declined. He was a perfect master of ridicule, and made that his weapon to correct college delinquents. Some of his verses in the *Muse Anglicana* are excellent of their kind.

BATHURST INLET projects s. about 75 m. from Coronation gulf in the Arctic ocean, 68° n., 111° w.; 300 m. from Great Slave lake.

BATHYÁNI. See BATTHYÁNYI, *ante*.

BATHYBIUS, the name given by Huxley to a low form of protozoan found in calcareous mud brought up by sea dredging. Prof. Huxley supposes this substance to cover a large part of the bed of the ocean, and to be a living expanse of transparent, gelatinous, or protoplasmic matter, growing at the expense of inorganic elements. Others regard B. not as an animal, but as slime enveloping foreign bodies and the remains of once living organisms, and also numerous living forms. Similar growth in fresh water is called "pelobius."

BATHYLLUS of ALEXANDRIA, a freedman or favorite of Mæcenas. He excelled in pantomimic dancing, and in the representation of comic characters.

BAT MALTHÆA, *Malthæa vespertilio*, a fish of the Atlantic ocean, noted for its extreme ugliness of shape; a monstrous aggregation of hideousness. It is something like a bat, and something like a scorpion; is covered with prickles and warts, with fins like wings armed with claws, goggle-eyed, and of a shape that defies measurement or delineation.

BATO'NI, POMPEO GIROLAMO, 1708-87; a native of Lucca. He was regarded in Italy as the great painter of the 18th c., and did much to rescue the art from the intense mannerism into which it had fallen. His works, though not of a high order, are generally well designed and graceful. The group "Peace and War" is considered his best production. He painted a great number of pieces, and was also celebrated for his portraits.

BATTALION (*ante*). In the U. S. army, infantry regiments have one B.; cavalry and artillery have two. Detachments of more than a company and less than a regiment are frequently called battalions.

BATTERY (*ante*), in criminal law, any unlawful beating or other wrongful physical violence or constraint inflicted upon a person without his consent. B. must be wilfully committed or result from want of care. An injury done in an angry, rude, or spiteful manner, such as spitting on a person, or even touching him in anger, or to insult, or annoy, is a B.; or it is a B. if one strike a cane in the hands of another. But B. may be justified, as in a parent's correction of a child, or a schoolmaster's discipline of a scholar, or as a means of preserving the peace, or of defense, or the protection of others; but in such cases the B. must not exceed the necessary amount; and a B. may also be justified in defense of one's property.

BATTICALO'A, a t. in the eastern province of Ceylon, on an island, 7° 44' n., 81° 52' e.; pop. 3353. It is important for its haven and adjacent salt lagoons. There is a fort, and a small English settlement. Pop. of the district, 93,220.

BATTLE CREEK, a city in Calhoun co., Mich., on Kalamazoo river, at the crossing of the Michigan Central and the Peninsular division of the Chicago and Lake Huron railroads; 121 m. w. of Detroit; pop. 5323; in '80, 7592. There are manufactures of flour, woolens, etc., and in the neighborhood are quarries of superior sandstone.

BATTLE OF THE SPURS, the first important conflict between the burghers and the nobles at Courtrai, in 1302, the French nobility being utterly defeated. They rushed forward with loose reins and fell into a great ditch; their army was annihilated, and among the spoils were 4000 spurs of gold.

BATTUS, founder of the Greek colony of Cyrene, in Libya, directed there by the Delphic oracle, about 650 B.C. He ruled 40 years and was succeeded by his son B. II., called "the prosperous," under whom the colony rapidly increased, land being given free to immigrants from Greece. The next of the Battiadæ on record was Arcesilaus II., about 554-44 B.C., who was defeated by the revolted Libyans, and strangled by his brother Learchus. The next heir, B. III., was lame; Demonax of Mantinea was the real ruler. The wife and son of the lame king, however, recovered the sovereignty, but the son, Arcesilaus III., was slain by fugitives from Cyrene while hiding from vengeance in Barca. The mother made war upon Barca and perpetrated great cruelties in revenge for the death of her son, but she soon after died miserably in Egypt. There followed a B. IV., and soon Arcesilaus IV., with whom the dynasty ended. The latter won a victory in chariot racing during the Pythian games, and was eulogized by Pindar.

BATU'TA, IBN (MOHAMMED-IBN-ABDALLAH), 1302-78; a Moor who traveled extensively in Asia and the eastern islands, Africa, and Spain. He wrote full observations, but only extracts or epitomes have been preserved.

BAUDELAIRE, CHARLES, 1821-67; a French poet, one of the curious class now known as "Bohemians." Some of his writings are gross, while some, especially his little poems, are very beautiful; but nearly all are in the romantic, or rather ecstatic, vein of affectation peculiar to writers of intolerable egotism. The only work of B.'s which has a living power is his translation of the writings of Edgar Allan Poe, which is pronounced one of the most brilliant and faithful translations of the age.

BAUDELOCQUE, JEAN LOUIS, 1746-1810; a French surgeon, especially devoted to obstetrics, in which he gained great reputation. He was one of the earliest to use forceps in difficult parturition. Napoleon selected B. to attend on the confinement of Maria Louisa.

BAUDRILLART, HENRI JOSEPH LÉON, b. Paris, 1821; a political economist and author, editor of the *Journal des Economistes*, and connected with *Des Debats*, being son-in-law of the editor. In 1866, he was appointed professor of history and political economy in the college of France. He has written many works, chiefly upon his favorite themes of political economy.

BAU'ER, BERNARD, of a Jewish family, b. Hungary, 1829; served in the French army and became a convert to Roman Catholicism, joining the Carmelites. He was

chaplain at the Tuileries, and a special favorite of the empress Eugenie. During the siege of Paris he was chaplain of the ambulances of the press. His lectures and some political pamphlets are published.

BAUER, GEORG LORENZ, 1754-1806; a German theologian who taught that the Bible, like the old classics, must be interpreted by historical and grammatical lights, and not with regard to religious doctrines. He was the first to write a systematic exposition of the Christian dogmas as they are contained in the Bible, and in each book in particular. He was an accomplished oriental scholar, translating much from the Arabic and other eastern tongues.

BAUHIN, GASPARD, 1560-1624; a French physician and botanist, b. in Switzerland; professor of anatomy and botany in the university of Basel in 1588, afterwards rector and dean of the faculty. His works on botany, catalogues, etc., were better than others of his time, and a work of his on anatomy is commendable.

BAUHIN, JEAN, 1541-1613; brother of Gaspard, a student of the botanist Fuchs and companion of Gesner in collecting plants. He also practiced medicine, and in his later life was physician to the duke of Württemberg. He wrote a work on the medicinal waters of Europe; but his great work on plants was left unfinished. B. is considered one of the founders of botanical science.

BAUMÉ, ANTOINE, 1728-1804; a French chemist, distinguished for success in the practical application of the science. He became a professor in the college of pharmacy, kept a large establishment for the preparation of drugs, and published many papers on chemistry, and arts and manufactures. Among his inventions and improvements were a process to bleach raw silk, the manufacturing of sal ammoniac, of improved scarlet dyes, and a cheap process for purifying saltpeter. He published several works on his favorite theme of chemistry. He made for the areometer a scale which is still used.

BAUMGARTEN, MICHAEL, b. 1812; a German theologian; studied at Kiel, became professor at Rostock, and a prominent and energetic defender of the Protestant association.

BAUMGARTNER, GALLUS JAKOB, 1797-1869; a politician and historian of Switzerland, the son of a mechanic. He studied law, and was a leader of the liberals, but afterwards associated with the ultramontanes. He has been a member of a number of legislative bodies.

BAWR, ALEXANDRINE SOPHIE COURRY DE CHAMPGRAND, Baroness de; 1773-1861; a French novelist and dramatist, wife of Saint Simon, who got a divorce because he did not think her fit to be the wife of "the first man in the world." In 1806, she wedded baron de Bawr, who was killed by accident a few months after the marriage. Some of her plays are still occasionally acted.

BAXTER, a co. in n. Arkansas, on the Missouri border, bounded on the n. by White river; about 600 sq.m.; pop. '80, 5901. The surface is hilly and undulating, and the soil fertile. Farming and stock-raising are the main occupations. Co. seat, Mountain Home.

BAXTER, ANDREW, 1686-1750; a Scotch philosopher, author of *An Inquiry into the Nature of the Human Soul, wherein its Immateriality is evinced from the Principles of Reason and Philosophy*. He also wrote on questions of science for the teaching of children.

BAY, a co. in n.e. Michigan on Saginaw bay; intersected by Saginaw river and a branch of the Michigan Central railroad; 750 sq.m.; pop. '74, 24,832. There is little of agriculture, lumber being the main article of trade. Co. seat, Bay City.

BAYARD, JAMES ASHETON, 1767-1815; b. Philadelphia; a descendant of Nicholas B., a French Huguenot; educated at Princeton; began law practice in Delaware; was elected to congress; declined the mission to France; was chosen U. S. senator in 1804; was one of the commissioners of the United States at Ghent to negotiate for peace with Great Britain in 1814; afterwards offered the mission to Russia, but refused it.

BAYARD, JAMES ASHETON, son of the first James Asheton; U. S. senator from Delaware for two terms, resigning in 1869. He was an eminent lawyer, and for years chairman of the senate judiciary committee.

BAYARD, JEAN FRANÇOIS ALFRED, 1796-1853; a French dramatist, working with Dumanoir, Scribe, and others, and husband of Scribe's niece. He was the author of more than 200 plays.

BAYARD, RICHARD BASSETT, 1796-1868, b. Del.; son of the first James Asheton. He was U. S. senator from Delaware from 1836-39, and from 1841-45.

BAYARD, THOMAS FRANCIS, b. Del., 1828; son of the second James Asheton; succeeded his father as U. S. senator in 1869.

BAY CITY, seat of justice of Bay co., Mich., on Saginaw river, near its junction with the bay of that name; on the Jackson, Lansing and Saginaw railroad, and the terminus of the Detroit and Bay city, and East Saginaw roads; pop. '74, 13,690; in '80, 38,088. It is growing rapidly and has an important trade in timber, salt, and fish.

BAYFIELD (formerly **LA POINTE**), a co. in n.e. Wisconsin, on lake Superior, including several islands; 1450 sq.m.; pop. '74, 1032; in '80, 680, or, with Indians counted, about 1100. The surface is uneven, and in great part covered with forests. Co. seat, Bayfield.

BAYLEY, JAMES ROOSEVELT, D.D., 1814-77; b. N. Y.; a graduate of Washington (now Trinity) college, Hartford; ordained minister of the Protestant Episcopal church, and preached in New York and Maryland; went over to the Roman Catholic church, and was ordained by bishop Hughes in Mar., 1842; was professor of belles lettres at St. John's college, Fordham, N. Y., and president thereof. From 1846 to 1853 he was secretary to archbishop Hughes, and in the latter year was consecrated bishop of Newark, N. J. He founded Seton Hall college, and many schools and other institutions. In 1872, he was made archbishop of Baltimore. He published a history of the Roman Catholic church in New York, *Pastorals for the People*, etc. He was much esteemed for his social as well as his intellectual gifts.

BAYLEY, RICHARD, 1745-1841; b. Conn.; became a physician; studied in London hospitals; practiced in New York in 1772; went to Europe in 1775, and the next spring returned as staff-surgeon to sir Guy Carleton. He lectured on surgery, and published a work on croup; was professor of anatomy and surgery in Columbia college; first health officer of the port of New York; wrote on yellow-fever, which he did not believe was contagious, and finally died of ship-fever taken while on duty as health officer. His sister, Mrs. Seton, who with his son (afterwards bishop B.) became Roman Catholic, founded the order of sisters of charity in this country.

BAYLOR, a co. in n.w. Texas; 900 sq.m.; thus far unsettled. It has a mountainous surface, with rich bottom lands.

BAYLY, LEWIS, d. 1632; b. in Wales; educated at Oxford; in 1616, made bishop of Bangor. He was the author of *The Practice of Piety*, the most popular religious book until Bunyan's work appeared. His son, Thomas, became a conspicuous Roman Catholic, and published, among other works, *The End of Controversy*.

BAYLY, THOMAS HAYNES, 1797-1839; an English poet. He was intended for holy orders, and educated at Oxford; inherited a large fortune, but lost it, and in 1831 began to write songs for music, and, with Henry Bishop, published *Melodies of Various Nations*. Within a few years he wrote 36 pieces for representation, a number of stories, and hundreds of songs. Some of the more popular were *The Soldier's Tear*; *Why Don't the Men Propose?* *We Met, 'twas in a Crowd*; *I'd be a Butterfly*, etc. His larger works were *Alymers*, *Kindness in Women*, *Weeds of Witchery*, etc. Two volumes were published after his death.

BAYNE, PETER, b. 1829; a Scotch author; educated in Marischal college, Aberdeen; studied theology at Edinburgh, and philosophy under sir William Hamilton. He wrote criticisms on Alison, De Quincey, Hugh Miller, and others. In 1855, he published *The Christian Life, Social and Individual; Essays in Biography and Criticism*. He was editor of the *Glasgow Commonwealth*, traveled and studied in Germany, and married the daughter of a Prussian general. His more recent works are a defense of Hugh Miller's *Testimony of the Rocks*, *Testimony of Christ and Christianity*, and *The Days of Jezebel*, a historical drama.

BAYOU, a stream not fed with springs, but running from one body of water to another, like a canal. Tidal channels in the states on the gulf of Mexico often have the name.

BAYOU SARA, a village in Louisiana, parish of W. Feliciana, 165 m. above New Orleans, on the Mississippi; an important point for shipping cotton.

BAYRHOFER, KARL THEODOR, b. 1812; German philosopher and politician; professor of philosophy in the university of Marburg. He was prominent in the revolutionary movement of 1848, a member of the diet of Hesse-Cassel, and for a time president of the chamber. After the defeat of his party (the democratic) he migrated to America.

BAZALGETTE, JOSEPH WILLIAM, b. 1819; an English civil engineer (of French descent) who executed the great drainage works of London, and planned others at home and abroad. He was also one of the engineers of the Thames embankment.

BAZANCOURT, CÉSAR DE, Baron, 1810-65; a French author; director of the library at Compiègne, and author of *History of Sicily under Norman Domination*. He was the official historian of the Crimean and Italian campaigns; wrote an account of the French expeditions to China and Cochin China, and a work on fencing.

BAZIN, ANTOINE PIERRE ERNEST, b. 1807; a French physician and professor of dermatology. His works relate chiefly to syphilis, and diseases of the skin.

BAZIN, ANTOINE PIERRE LOUIS, brother of A. P. Ernest, a French professor of Chinese, translator from that language, and author of a Chinese grammar.

BEACH, MOSES YALE, 1800-68; b. Conn.; in early life a cabinet maker; inventor of a rag-cutting machine for paper mills, and of an engine for propelling balloons. After trying paper manufacturing, in 1835 he acquired an interest in the *Sun*, a penny daily

paper begun in New York about three years earlier. He soon became sole proprietor, and was for years one of the pioneers of the penny press. Leaving the paper to his sons, he retired in 1857 with an ample fortune.

BEACH PLUM, *Prunus maritima*, a sea-beach shrub of the Atlantic coast of the United States, bearing fruit much like the common garden plum. It abounds on the low sandy shore at the eastern end of Long island toward Montauk, and occurs from Massachusetts to Virginia.

BEALE, LIONEL SMITH, b. 1828; an English physiologist and microscopist, professor in the university of London. He has written in opposition to Darwin's theories. Among his productions are *How to Work with the Microscope*, *The Structure of the Tissues of the Body*, *Protoplasm*, etc.

BEAMAN, FERNANDO C., b. Vt., 1814; practiced law in Adrian, Mich., where he was probate judge, presidential elector, and member of congress. He was an early opponent of the extension of slavery. His standing in the legal profession is high.

BEARD, JAMES H., b. N. Y., 1815; brought up in Ohio, and began to paint portraits at the age of 14; settled in Cincinnati, and became conspicuous in his profession. In 1846, he exhibited his first composition, "The North Carolina Immigrants," which gave him a national reputation. Among later works are "The Land Speculator," "The Long Bill," "Out all Night," etc. He has painted portraits of Clay, Harrison, Taylor, and many other public men.

BEARD, RICHARD, D.D., b. Tenn., 1799; graduate of Cumberland college, and in 1843 president thereof; from 1854 professor of systematic theology in the same institution. He is a leader in the Cumberland Presbyterian organization, and his work on *Systematic Theology* is the embodiment of their doctrines. Dr. B. has been a zealous worker for the church and for the education of the people.

BEARD, WILLIAM H., b. Ohio, 1824; brother of James H. and also a painter. He began portrait-painting when young; visited Europe, and settled in New York in 1860. His compositions are mostly grotesque or satirical; some of them are "Bears on a Bender," "Dance of Silenus," and "Court of Justice."

BEARDSTOWN, seat of justice of Cass co., Ill., on the Illinois river, and the Rockford, Rock Island and St. Louis railroad, at the terminus of the Springfield and Illinois Southern railroad; pop. 2528. It has some manufacturing establishments, and good trade in agricultural products.

BEAR MOUNTAIN, in Dauphin co., Penn., containing valuable beds of anthracite. The "mountain" is only about 760 ft. high.

BEAR RIVER, in Utah; 400 m. long; flows into and out of Idaho, and empties into Great Salt lake. There are magnesian and other mineral springs on its banks. Coal is found where the Central Pacific railroad crosses. One of the peculiar features is a group of soda springs occupying 6 sq. miles.

BEASLEY, FREDERICK, D.D., 1777-1845; b. N. C.; an Episcopal clergyman; from 1813 to 1828 professor of moral philosophy in the university of Pennsylvania; author of a defense of Locke called *Search of Truth in the Science of the Human Mind*; also of works in opposition to the doctrines of Dr. Channing.

BEAT, IN MUSIC (*ante*), a term used in the plural for the pulsations or throbbings resulting from the vibrations of two sounds of the same strength and nearly the same pitch, or two sounds alike in intensity but not in exact unison. In tuning unisons, as in the case of two or more pipes or strings, the operation is guided by beats; until the unison is perfect, more or less of beating will be heard; when the unison is very defective, the B. have the effect of a rattle. The complete absence of B. affords the best means of attaining by trial a perfect harmony.

BEATRICE PORTINARI, Dante's poetical idol; daughter of a Florentine noble, remarkably graceful and accomplished. Dante first saw her when she was but nine years old, and but seldom afterwards; but in his vivid imagination she grew to be the personification of divine truth, and so appears in the *Divine Comedy*. In 1287, she married a citizen of Florence.

BEAUCE, a co. in Canada, province of Quebec, on the Maine border; 1100 sq. m.; pop. '71, 27,253; traversed by Chaudiere river. Chief t., St. Joseph.

BEAUFORT, a co. in e. North Carolina, on Pamlico river and sound; 1000 sq. m.; pop. '70, 13,011—4632 colored. It has a level, sandy, and marshy surface; products, tar, turpentine, corn, sweet potatoes, rice, etc. Co. seat, Washington.

BEAUFORT, a co. in s.e. South Carolina, on the sea-coast and the Savannah river; 1540 sq. m.; pop. '70, 34,359—29,050 colored. Productions, corn, rice, sweet potatoes, and Sea island cotton. Co. seat, Beaufort.

BEAUFORT, a t. and port of entry, the seat of justice of Carteret co., N. C., at the mouth of Newport river, 11 m. n.w. of cape Lookout; reached by the Atlantic and North Carolina railroad; pop. '70, 2340—1243 colored. There is a good harbor, the entrance to which is protected by fort Macon. The principal trade is in tar and turpentine.

BEAUFORT, a t. and port of entry in Beaufort co., S. C., on Port Royal island and Broad river, 14 m. from the ocean; pop. '70, 1739—1273 colored. It is at the terminus of the Port Royal railroad; it has a good harbor, and is a popular summer resort.

BEAUFORT, Sir FRANCIS, 1774—1857. He served in the British navy, and was in the fight off Brest in 1794; commodore in 1800, and wounded in the fight near Malaga. He traveled in the east, and wrote a description of his route; in 1812, was wounded in a conflict with Turkish pirates, and returned to England; became rear-admiral in 1846. He contributed much to the science of geography, hydrography, etc., and was a member of most of the English learned societies.

BEAUFORT, FRANÇOIS DE VENDÔME, Duc de, 1616—69; grandson of Henry IV. of France; served in the thirty years' war; conspired with Cinq-Mars against Richelieu, and fled for safety. Under Louis XIV. he was in a conspiracy against Mazarin, and was imprisoned. He escaped in 1648, became a leader of the frondeurs, and was called by the Parisian populace "king of the markets." He killed the duke of Nemours, his brother-in-law, in a duel; afterwards made his peace with the court, and was appointed to command the navy. In 1664, he defeated the African corsairs; in 1666, led the fleet which was to aid the Dutch against England; in 1669, he assisted the Venetians, who were besieged by the Turks in Candia, and was there killed in a sally.

BEAUFORT, MARGARET, 1441—1509; countess of Richmond and Derby, daughter of the duke of Somerset, wife of the earl of Richmond (half-brother of Henry VI.) and by him mother of Henry VII. of England. She was afterwards wife of Sir Henry Stafford, and of Thomas, lord Stanley. She endowed Christ's and St. John's colleges in Cambridge, establishing a divinity school in each, but Henry VIII. recovered the property as her heir. She translated some devout works from the French.

BEAUHARNAIS, HORTENSE EUGÉNIE. See BONAPARTE, *ante*.

BEAUHARNOIS, a co. in the province of Quebec, Canada, on the St. Lawrence, and including Grand island; 200 sq. m.; pop. '71, 14,759. Chief town, Beauharnois, 18 m. s.w. of Montreal.

BEAUMANOIR, PHILIPPE DE, d. 1296; a French writer on law. In 1273, he was *bailli* at Senlis, and in 1280 held a similar office at Clermont. His chief work, *Coutumes de Beauvoisis* is highly commended by Montesquieu.

BEAUMONT, a t. in the department of Ardennes, France, on the Meuse, 10 m. s.e. of Sedan; pop. estimated, 1400. In the neighborhood, Aug. 30, 1870, the French under Marshal MacMahon were defeated by the Germans under the crown prince of Saxony, who gained by the battle such advantages as compelled the immediate surrender of Sedan.

BEAUMONT, WILLIAM, 1796—1853; b. Conn.; a surgeon in the U. S. army, noted for discoveries in the processes and laws of digestion, made in watching the operations of the stomach in the case of Alexis St. Martin. On the 6th of June, 1822, St. Martin, then supposed to be 22 years old, while at Mackinac, Mich., was accidentally shot, receiving the entire charge of the musket in his left side, the muzzle of the gun being about three feet from his body. The discharge tore away portions of his clothing, fractured two of his ribs, lacerated his lungs, and lodged in his stomach. Dr. B., who was then stationed at Mackinac, restored St. Martin to good health within a year, renewing his former strength and spirits, though the aperture made by the shot was never closed. Two or three years afterwards, Dr. B. commenced a series of experiments upon the stomach of the *voyageur*, studying its operations and secretions, the action of the gastric juice, etc. These experiments he continued from time to time, his patient presenting the spectacle of a man enjoying good health, appetite, and spirits, with an opening in his stomach, through which the action of that organ could be satisfactorily noted from the exterior. Dr. B. was the first individual who obtained the gastric juice from a living human being, and he has demonstrated, beyond a doubt, its chemical properties and digestive powers. He published the result of his experiments in 1833. St. Martin was still living in Dec., 1879.

BEAUMONT DE LA BONNIÈRE, GUSTAVE AUGUSTE DE, 1802—66; a French advocate who in 1831 came to the United States with De Tocqueville to examine our penitentiary system, and with him published a book on the subject. Beaumont de la Bonnière also wrote *Marie, or Slavery in the United States*, a novel; and in 1839, *Ireland, Political, Social, and Religious*. In 1840, he was chosen to the chamber of deputies; in the constituent assembly of 1848 he was a member of the committee of foreign affairs, and Cavaignac sent him as minister to England. After 1851 he retired from politics. His wife was a granddaughter of Lafayette.

BEAUSOBRE, ISAAC DE, 1659—1738; a Protestant writer of French origin, ordained at the age of 22. Having broken the royal seal put upon a church door to prevent the reformers from exercising their religious rites therein, he was ordered to make the *amende honorable*, but declined, and fled to Holland. He was afterwards chaplain to the king of Prussia. Among his works are a defense of the doctrines of the reformation; essays on providence, predestination, grace, and the eucharist; a translation of the

New Testament with notes; a curious book on the Adamites of Bohemia; a criticism on Manicheism, and several dissertations on the *Bibliothèque Britannique*.

BEAUTEMPS-BEAUPRÉ, CHARLES FRANÇOIS, 1766-1854; b. France; hydrographer to the expedition sent in search of La Perouse. He made valuable charts of many of the places visited. In 1796, he completed his *Atlas of the Baltic*, and for several years afterwards he labored in connection with marine surveys, making many valuable charts. He became fellow of many scientific societies, and was in active duty in his profession nearly all his life. In England he has been styled "the father of hydrography."

BEAVER, a co. in w. Pennsylvania, intersected by the Cleveland and Pittsburg, and the Pittsburg, Fort Wayne and Chicago railroads, 650 m. square. Pop. '70, 36,148. The soil is fertile; products, hay, grain, butter, cheese, etc.; and there are mines of coal and limestone. Co. seat, Beaver.

BEAVER, a co. in s. Utah on the Nevada border, drained by Beaver river; pop. '70, 2007. A large portion is an arid plain with little water or timber; yet there is considerable agriculture. Iron ore is found. Co. seat, Beaver.

BEAVER DAM, a city in Dodge co., Wis., 61 m. n.w. of Milwaukee, on the Chicago, Milwaukee, and St. Paul railroad, at the outlet of Beaver lake; pop. '80, 3441. It is the market center of a fertile district, with factories, flour-mills, etc.

BEAVER FALLS, a village in Beaver co., Penn., on the Beaver river near its junction with the Ohio, 34 m. n.w. of Pittsburg; on the Pittsburg, Fort Wayne and Chicago, and the Erie and Pittsburg railroads; pop. 5000. There are many manufactories, nearly all of which are controlled by the "Harmony" society of economy.

BEAVER HEAD, a co. in s.w. Montana, on Jefferson river, about 4393 sq.m.; pop. '70, 722. The surface is rough. Stock-raising and mining are the main occupations. Co. seat, Bannack city.

BEAVER INDIANS, a tribe on Peace river, in British America, allied to the Chipewas.

BEAVER ISLANDS, in lake Michigan, w. of the straits of Mackinac, forming the co. of Manitou. A band of Mormons settled on the principal island in 1846, but did not long remain there. Chief town and co. seat, St. James.

BEAVERTAIL, in Narragansett bay, the s. extremity of Canonicut island. It has a light-house with fixed white light, 96 ft. above tide, and a fog-horn.

BECCAFUMI, or MECHERINO, DOMENICO, b. about 1488, d. 1551; an Italian painter, the son of a peasant. Lorenzo Beccafumi, a rich nobleman, took the boy into his service, and fostered his natural taste for art, by sending him to study in Rome. B. painted many religious pieces for churches, and mythological works for private patrons. He also continued the wonderful pavement in the cathedral of Siena, his native place. For 150 years the best artists worked upon this pavement, which was of white marble, the subject being engraved in black outline, and the border inlaid with rich patterns of many colors. Beccafumi was occupied in this work 27 years. He also made a triumphal arch and an immense mechanical horse for the procession at the entry of Charles V. into Siena.

BECCARI'A, GIAMBATTISTA, or GIOVANNI BATTISTA, 1716-81; an Italian astronomer and electrician. He was professor of experimental physics at Palermo, Rome, and Turin. In 1775, he was elected a fellow of the royal society of London. In 1759, he was commissioned to measure an arc of the meridian in the neighborhood of Turin. His principal work was *Electricity, Artificial and Natural*.

BECK, JOHN BRODHEAD, 1794-1851; b. N. Y.; a graduate of Columbia college, and professor of materia medica in the New York college of physicians and surgeons. Among his works is *Infant Therapeutics*.

BECK, LEWIS C., 1798-1853; b. N. Y.; brother of John Brodhead; a graduate of Union college; professor of chemistry in Albany medical college; author of works on botany and chemistry, and of an elaborate report on the mineralogy of the state of New York.

BECK, THEODORIC ROMEYN, LL.D., 1791-1855; b. N. Y.; brother of John Brodhead; an American physician; he graduated at Union college, practiced in Albany, and in 1841 was professor of materia medica in the medical college of that city. He was author of *Elements of Medical Jurisprudence*.

BECK, or BEEK, DAVID, 1621-56; a Dutch painter, trained by Van Dyck; and acquiring many of that master's excellences. He was portrait painter and chamberlain to queen Christina of Sweden, with whom he was in high favor. For her gallery he made portraits of nearly all of the sovereigns of Europe.

BECKER, a co. in n.w. Minnesota, at the head of the Red river of the n.; intersected by the Northern Pacific railroad; 1400 sq.m.; pop. '75, 2256. The surface is about 1700 ft. above tide and dotted with lakes. The soil is generally good. Co. seat, Detroit city.

BECKER, HERMAN HEINRICH, b. 1820; a German radical politician, whose extreme views led to his imprisonment for several years after 1848. He has since been a member of the Prussian house of deputies and of the North German parliament, and a leader on the liberal side.

BECKX, PIERRE JEAN, b. Belgium, 1795; a general of the order of Jesuits. He became a member of the society of Jesus in 1819, and was the head of the order in 1853. Soon after receiving orders, his superiors recognized his rare abilities, and sent him on several delicate missions. When the duke Ferdinand of Anhalt-Köthen became a convert to the Roman Catholic religion, young Beckx was appointed his confessor, and he officiated for some years as priest of the new church which was built at Köthen. After the death of the duke, B. continued at the court with the widow, the countess Julia, whom, at a later period, he accompanied to Vienna. In 1847, he became procurator for the province of Austria, and in this capacity he went to the college of procurators at Rome. In the following year the Jesuits were temporarily driven from Austria, and consequently father B. went to Belgium, where he was nominated rector of the Jesuit college at Louvain. When the Jesuits were re-established in Austria, he zealously supported the projects of the government, which were highly favorable to the interests of the church. He lent his powerful aid to the primate of Hungary, cardinal Szeitowsky, who succeeded in obtaining the reinstatement of the Jesuits in that portion of the empire, and in founding the noviciate at Tyrnan. Being sent to the assembly at Rome in 1853, to choose a successor to father Roothan, he was elected superior of the order. The success of the Jesuits since that time, especially in non-Catholic countries, is due, in no slight degree, to the ability and foresight of father B. Besides some minor writings and occasional discourses, he has published a *Month of Mary*, which has passed through numerous editions, and been translated into many languages.

BEDELL, GREGORY THURSTON, D.D., b. N. Y., 1817; son of Gregory Townsend; educated in Bristol college, Penn.; was rector of the Protestant Episcopal church of the Ascension in New York city from 1843 to 1859, when he was chosen bishop of Ohio. Among his works are *The Divinity of Christ*, *The Profit of Godliness*, *Principles of Pastoralship*, *Sacredness of the Grave*, *The Age of Independence*, etc.

BEDELL, GREGORY TOWNSEND, D.D., 1793-1834; b. N. Y.; a clergyman of the Protestant Episcopal church; graduated at Columbia college, and won high position as a preacher. He published *Onward, or Christian Progression*, *Renunciation*, *Haymarkets*, *Ezekiel's Vision*, *Bible Studies*, sermons, etc.

BEDESMAN, one who solicits or prays for something. The Anglo-Saxons called a prayer "bead," and in manuscripts of the 15th c. are the expressions before the name, "Your humble bedesman," or "bedeswoman."

BEDFORD, a co. in Pennsylvania on the Maryland border, drained by the Juniata, and reached by the Bedford division of the Pennsylvania railroad; 1000 sq.m.; pop. '70, 29,625. It has a mountainous surface, but is good for cattle raising. Coal mining is also carried on. Co. seat, Bedford.

BEDFORD, a co. in central Tennessee, on Dutch river, intersected by the Nashville and Chattanooga railroad; 550 sq.m.; pop. '70, 24,333-6484 colored. It has an undulating and fertile surface; produces corn, wheat, tobacco, cattle, etc. Co. seat, Shelbyville.

BEDFORD, a co. on the James river in s. Virginia, intersected by the Ohio, Mississippi and Atlantic railroad; 504 sq.m.; pop. '70, 25,327-10,770 colored; in '80, 31,226. The chief crops are cereals, tobacco, and wool. The peaks of Otter in this co. present magnificent scenery, and the Bedford alum springs are valuable. Co. seat, Liberty.

BEDFORD, a village and capital of B. co. in Penna., on the Huntington and Broad Top railroad, 94 m. w.s.w. of Harrisburg; pop. '70, 1247. The B. springs are a fashionable summer resort. There are iron and other manufactories in the village.

BEDFORD, GUNNING S., 1806-70; b. Baltimore; a graduate at St. Mary's college, Md.; was professor in Charleston, S. C., in Albany medical college, and of midwifery in the New York university. Among his works are treatises on obstetrics, *Lectures on Diseases of Women*, etc.

BEDLOE'S ISLAND, in the bay of New York (named after an early owner); ceded to the federal government for the purpose of harbor defense, and now occupied by fort Wood. It is a mile and a half w. of the Battery, or s. point of the city.

BEE, a co. in s. Texas, on the Arkansas river; 900 sq.m.; pop. '70, 1082-69 colored; a level, sandy, cattle-breeding region. Co. seat, Beeville.

BEECHER, CATHERINE ESTHER (*ante*), 1800-78; b. N. Y.; eldest child of Lyman. Her mother died when C. was about the age of 16, and for two years she had the care of her father's house at East Hampton. When she was about 19 years old she was engaged to prof. Fisher, of Yale college, but he was lost in shipwreck on a voyage to Europe, and she remained unmarried. In 1822, she began a school at Hartford, Conn., and kept it until 1832, when she went with her father to Ohio, and opened a seminary for young women in Cincinnati, but was compelled to give it up two years later on account of ill health. She made it the business of her life to improve and advance the intellectual, physical, and practical education of women. She organized societies and

schools for training teachers and sending them to new states and territories. In pursuit of this object she published *Domestic Service, Duty of American Women to their Country, Domestic Receipt Book, True Remedy for the Wrongs of Women, Letters to the People on Health and Happiness, Physiology and Calisthenics, Religious Training of Children, The American Woman's Home*, etc. She also published *Common Sense applied to Religion, Truth Stranger than Fiction*, a memoir of her brother George, and *Appeal to the People as the Authorized Interpreters of the Bible*.

BEECHER, CHARLES, b. Conn., 1815; fourth son of Lyman; ordained in 1844, and became Congregational pastor in Newark, N. J., and afterwards in Georgetown, Mass. He assisted Henry Ward B. in the compilation of *Plymouth Hymns and Tunes*, and has published *The Incarnation, Review of Spiritual Manifestations, Pen Pictures of the Bible*, and, jointly with Mrs. Stowe, *Sunny Memories of Foreign Lands*.

BEECHER, EDWARD, D.D. (*ante*), b. 1804; second son of Lyman; graduate at Yale, and in theology at Andover; Congregational pastor in Boston from 1826 to 1831; in the latter year president of Illinois college, where he remained 13 years, and in 1844 was again in Boston, pastor of Salem street church. In 1856, he became pastor of the Congregational church at Galesburg, Ill. About eight years ago he retired from the ministry and removed to Brooklyn, where he now resides. Dr. B. has written on the theme that man is in a progressive state, the present being the outcome of a former life, and a preparation for one to succeed after death; that the struggle between good and evil will not end with this life, but in some future era all conflicts will be ended, evil will disappear, and harmony become established. These views are set forth in *The Conflict of Ages*, and *The Concord of Ages*. He has also published a work on Baptism, and one entitled *The Papal Conspiracy*.

BEECHER, HENRY WARD (*ante*), b. Litchfield, Conn., June 24, 1813; third son of Lyman; a graduate of Amherst college and of Lane theological seminary. He began his pastoral work over a small Presbyterian church in Lawrenceburg, Ind., in 1837; and in 1839 was settled at Indianapolis. In 1847, he was called to take charge of "Plymouth church," a new Congregational organization in Brooklyn, N. Y., where he has continued until the present time, a third of a century. Mr. B. soon became one of the most popular, as he was one of the most effective, pulpit speakers, and the growth of his congregation was unprecedented in church history in this country. There are at present (1880) nearly 3000 members, and the congregation has a good proportion of the intellectual, social, and financial force of the city. H. W. Beecher was a writer before he came to the pulpit, and his pen as well as his voice has been constantly active. He was, in 1837, editor of a journal in Cincinnati, and while preaching in Indianapolis he took charge of an agricultural publication, his papers being afterwards issued in a volume called *Fruit, Flowers, and Farming*. As soon as he came to Brooklyn he began, and continued for nearly twenty years, to write for *The Independent*, and was for two years its editor, 1861-63. His well known signature (a star, *) suggested *The Star Papers*, made up of select contributions to *The Independent*. About ten years ago he became, and is now, the editor of *The Christian Union*, published weekly in New York. As a preacher he is known perhaps more generally among the people than any other occupant of a pulpit in this country, and not only citizens but strangers make it a point to attend his church, which, though one of the largest in America, is almost always full when he is to preach. As an orator he is original in manner and matter, avoiding most of the routine and conventionalism of the ordinary service, and addressing himself as a man to his fellow. He brings in all manner of topics and illustrations, and sometimes ventures so near to the comic that laughter is scarcely restrained. As a lecturer he has had a long and successful career. In the long conflict with slavery he was an early and an earnest soldier, and from the pulpit of Plymouth church came many of the severest denunciations of human chattel-hood. Nor have other questions been neglected; temperance has had his earliest support, and politics are not ignored, for it is his belief that all things which concern the welfare of the people and the country are fit subjects for the public teacher. In his fierce denunciations of injustice he is singularly free from uncharitableness toward persons. Though a man of peace, he is enough of a soldier to don the uniform and appear on parade as the chaplain of a regiment. Of his more personal tastes, it may be said that he is fond of domestic and rural life, a student of nature, a lover of animals, flowers, and gems, and a judge and patron of art. During the civil war he visited England, and took especial care to enlighten the people as to the real issues and purposes of our great struggle, thereby materially aiding in the similar work undertaken by archbishop Hughes, Thurlow Weed, and others. For twenty years his sermons have been taken down in shorthand and printed, comprising now more than a dozen volumes, known as *The Plymouth Pulpit*. Among other works of his are *Lectures to Young Men, Industry and Idleness, Life Thoughts, Sermons on Liberty and War, The Plymouth Hymns and Tunes, Norwood* (a novel), *Yale Lectures on Preaching, The Life of Christ, Sermons from Published and Unpublished Discourses*, etc. Mr. B. is of stout build, florid, and of strong physical constitution. Recently he has built a charming residence at Peekskill on the Hudson, which he occupies during a large part of the summer.

BEECHER, LYMAN, D.D. (*ante*), b. New Haven, Oct. 12, 1775; d. Brooklyn, Jan. 10, 1868; descended from one of the New Haven colony of 1638. He lost his father when an infant and was adopted as a son by Lot Benton; graduated from Yale in 1797, and next year became pastor of the Presbyterian church at East Hampton, Long Island, and there married Roxana Foote, who increased their slender means by teaching school. Mr. B.'s sermon on the death of Alexander Hamilton (killed in a duel with Aaron Burr in 1804) gave him immediate fame that rapidly increased until he was recognized as one of the foremost preachers in the country. In 1810, he went to Litchfield, Conn., where he was pastor of the Congregational church sixteen years. In 1814, he delivered and printed a series of sermons in favor of temperance, which added greatly to his reputation for eloquence and power. He was also foremost in the Unitarian controversy which pervaded eastern New England. In 1826, he became pastor of the Hanover street Congregational church, Boston. In 1832, he became president of Lane theological seminary, a new institution near Cincinnati, O., and held the office for twenty years, during ten of which he was pastor of the second Presbyterian church in Cincinnati. In 1835, he was tried by his presbytery for teaching false doctrines, but was acquitted on appeal to the synod. When the Presbyterian church separated, he went with the new school branch. In 1852, he returned to Boston, intending to revise and publish his writings, but his mental powers faded, and not very long afterwards he retired from public work. He was married three times, and had thirteen children, of whom all but three are now living (1880). George, a clergyman, was killed in 1843 by the accidental discharge of his gun. Dr. B.'s works have been published in three volumes.

BEECHER, THOMAS KENNICUT, b. Conn., 1824; son of Lyman; a graduate of Illinois college. He spent some time in teaching; became pastor of a Congregational church in Williamsburg (now the eastern part of Brooklyn), and afterwards of a similar church in Elmira, N. Y. He is the author of *Our Seven Churches*. He is a vigorous and spiritual preacher, a strong opposer of sectarianism, and a studious deviser of practical methods for bringing the influences of Christianity to bear through the church upon all classes in the community.

BEECHER (STOWE), HARRIET ELIZABETH. See STOWE, HARRIET ELIZABETH BEECHER, *ante*.

BEEMSTER, the largest of the tracts of reclaimed or drained lands in the Netherlands, about 8000 acres, 12 m. n. of Amsterdam. There is a village of 2600 people in the district.

BEGHARDS. See BEGUINES, *ante*.

BEGUM, the feminine of "Beg," meaning "lord" or "prince," bestowed upon sultanas and East Indian princesses.

BEHEMOTH, a large animal mentioned in the book of Job. Scholars are undecided whether it means the elephant, rhinoceros, hippopotamus, or crocodile; but as the animal was both of land and water, and fed upon grass, a number believe the hippopotamus was meant.

BEHRING ISLAND, the most westerly of the Aleutian group, in the n. Pacific, 55° 22' n., 166° e.; the place where the navigator, Behring, was wrecked in 1741. It is rocky and desolate; pop. about 2500, composed of natives and seal fishers.

BEHRING SEA, the sea of Kamtchatka, the extreme n. part of the Pacific ocean; connected by B. straits with the Arctic ocean; extends s. to the Aleutian islands, and from Alaska to the shores of Asia.

BEISSEL, JOHANN CONRAD, 1690-1768; a German who emigrated to Pennsylvania in 1720 and established at Ephratah the religious community of seventh-day Baptists, or Dunkers. He wrote a number of books upon religious subjects.

BEKKER, BALTHAZAR, 1634-98; a Dutch divine, author of several works in philosophy and theology, the most celebrated being *The World Bewitched*, in which he critically examines the phenomena ascribed to the agency of spirits, and exposes many of the absurdities about Satan that had become articles of religious faith. This book was so offensive to the clergy that B. was deposed from the ministry.

BEL. See BAAL, *ante*.

BELATA, BIELAJA, or BIELA, a river in the department of Orenburg, Russia, emptying into the Kama, after a course of about 600 miles.

BELCHER, JONATHAN, 1672-1757; colonial governor of Massachusetts from 1729-1841. He was a native of the colony, and a graduate of Harvard. In 1747, he was governor of the province of New Jersey, where he passed the latter part of his life.

BELED-EL-JEREED, a region of n. Africa between Algeria and the great desert, e. of Morocco. It is noted only for the production of dates.

BELFAST, a seaport in Waldo co., Me., on Penobscot bay, 30 m. from the ocean, at the terminus of the Belfast division of the Maine Central railroad. There is a good harbor, and some activity in ship-building and fisheries. Pop. '70, 5278.

BELFRY, or BEFFROI, a tower of wood, movable on wheels, used in sieges in the middle ages. Sometimes a battering-ram was used with it. It was as high as the wall

attacked, and a draw-bridge was rigged at the top to be dropped on the wall when occasion offered.

BELGARD, a t. in Prussia, 90 m. n.e. from Stettin; has manufactories of tobacco, wool, etc., and a castle; pop. '71, 6303.

BELGIC CONFESSION, a statement of faith based on Calvinistic principles, formed by Guido de Bres, of Brabant, and others, about 1561. It was published in the vernacular in 1563, and was received as a symbolical book by the synods of Antwerp and Dort.

BELIDOR, BERNARD FOREST DE, 1697-1761; a French military engineer, and a member of the academy of sciences; author of works on hydraulic architecture, fortifications, engineering, mathematics for the use of artillery, etc.

BELKNAP, a co. in New Hampshire; intersected by the Boston, Concord and Montreal railroad; 360 sq.m.; pop. '70, 17,681. The surface is hilly, soil fertile. Co. seat, Laconia.

BELKNAP, JEREMY, D.D., 1744-98; b. Mass., and graduate of Harvard; pastor in New Hampshire, and over Federal street church, Boston. He founded the Massachusetts historical society in 1791. Among his works are *History of New Hampshire*, and *American Biography*.

BELL, a co. in s.e. Kentucky, bordering on West Virginia and Tennessee, and drained by the Cumberland river; 500 sq.m.; pop. '70, 2731-111 colored. The surface is rough, and in some parts mountainous. Agriculture is the principal business. Co. seat, Pineville. This co. was formerly called Josh Bell.

BELL, a co. in w. Tennessee on the Mississippi, recently established; a good cotton section. Co. seat, Grand Junction.

BELL, a co. in Texas, in a fine prairie region on the Leon river, well adapted to general agriculture; 850 sq.m.; pop. '70, 9771-1104 colored. Co. seat, Belton.

BELL, CHARLES H., 1798-1875; b. N. Y.; rear-admiral in the U. S. navy. He served in the war with England in 1812, and in the rebellion, rising to commodore in 1862, and admiral in 1866.

BELL, HENRY H., 1807-69; b. N. C.; an American naval officer, capt. in 1862, commodore the next year, and rear-admiral in 1866. He was fleet capt. under Farragut at the capture of New Orleans. In 1865, he commanded the East India squadron, and was drowned while endeavoring to get his barge over the bar at the entrance of Osada river, Japan.

BELL, JOHN, 1797-1869; b. Tenn.; a graduate of Nashville university; a lawyer, and member of congress for 14 years from 1827. In 1843, he was speaker of the house of representatives, in 1841 secretary of war; was chosen senator in 1847, and again in 1853. In 1860, he was one of the four candidates for president of the United States, and got the votes of Kentucky, Tennessee, and Virginia, 39 in all.

BELL, LUTHER V., LL.D., 1806-62; b. Mass.; graduate of Bowdoin, and in medicine of Dartmouth; practiced in New York, and was president of the asylum for the insane at Somerville, Mass. In 1861, he was made brigade surgeon in the army, and at the time of his death was medical director of a division.

BELLAI, or BELLAY, GUILLAUME DU, lord of Langley; 1491-1543; a French gen., distinguished in the service of Francis I. He was an able soldier and diplomatist, Charles V. remarking that Langley's pen had fought more against him than all the lances in France. When Henry VIII. was seeking divorce from Catherine, Langley worked earnestly in favor of the king. His chief writings are his memoirs in 7 vols. He was buried in the church of Mans, where a noble monument was erected to his memory.

BELLAIRE, a city in Belmont co., Ohio, on the Ohio river, 5 m. below Wheeling, on the Baltimore and Ohio, and the Cleveland and Pittsburgh railroads. Pop. '70, 4,033; in '80, 8,028. There are many manufacturing establishments, including glass-houses, nail factories, planing mills, etc. The city is supplied with gas and water, and has street railroads. Its growth has been very rapid.

BELLAMONT, or BELLOMONT, RICHARD COOTE, Earl of, 1636-1701; English governor of the colonies of New York and Massachusetts; a member of parliament and an early advocate of the cause of William of Orange; attainted in 1589, but was the same year made earl, and appointed receiver general to queen Mary. He was sent out as governor in 1698. He was popular with the people of the colonies, though suspected of a degree of hypocrisy in religion. Under his administration the famous capt. William Kidd was taken, sent to England, and hanged on charge of piracy.

BELLAMY, JOSEPH, D.D., 1719-90; b. Conn., graduate of Yale, and Congregational pastor; famous for the pungency of his preaching. His sermons and other doctrinal works have been published. He prepared many candidates for the ministry.

BELLAY, JOACHIM DU, 1524-60; an eminent French poet. His youth was humble, and he was unknown until, at the age of 24, he met Ronsard, when a mutual friendship at once began. He joined the six poets who, under Dorat, were forming the "Pleiad,"

a society for the creation of a French school of renaissance poetry, and Bellay's first contribution was a prose volume, the *Defense and Illustrations of the French Language*, a remarkably strong piece of criticism. A year later he published the *Recueil de Poésie*, and a collection of love sonnets in the manner of Petrarch. In 1550, B. was sent to Rome, where he fell in love with a married lady, and to her addressed much of his best poetry. At last he won her, and his Latin poems end in rapturous delight. He was recalled to France and made a canon in Notre Dame, Paris. Thenceforward his brief life was one of social trouble but of literary activity. Finally, in 1560, when just nominated to be archbishop of Bordeaux, he suddenly died, and was buried in Notre Dame. Like Ronsard, he was very deaf. B. was long called the French Ovid. Spenser translated many of his sonnets into English.

BELLECHASSE, a co. of Canada, extending from the border of Maine to the St. Lawrence; 720 sq. m.; pop. '71, 17,637. The chief products are maple sugar, oats, flax, and hay. Chief town, St. Michel.

BELLEFONTAINE, the seat of justice of Logan co., O., 55 m. n.w. of Columbus, on the highest ground in the state; reached by the Cincinnati, Sandusky, and Cleveland railroad; pop. '70, 3182. It has some important manufactures.

BELLEFONTE, a t. in Pennsylvania, seat of justice of Center co., 87 m. w. of Harrisburg, at the base of Bald Eagle mountain, on the Bald Eagle valley railroad; has a number of manufactories, and is a summer resort for its springs and scenery. Pop. '70, 2655; in '80, 3030.

BELLE ISLE, **CHARLES LOUIS AUGUSTE FOUQUET**, Duc de, 1684-1761; a French soldier and statesman, who became lieut. gen. in 1732, and negotiated the treaty, three years later, whereby Lorraine was united to France. He was minister to Germany, and labored to bring the elector of Bavaria to the throne. In the war against Austria he captured Prague, but did not hold it. In 1745, he was a prisoner to the English, but was exchanged, and rose in promotion to duke, peer, member of the academy, and lastly minister of war.

BELLE ISLE, NORTH, an island at the entrance of Belle Isle straits, 52° n., 55° 20' w., 16 m. from the coast of Labrador. It has a surface of about 15 sq. m., and a harbor for small vessels.

BELLE ISLE, SOUTH, an island off the Newfoundland coast, 16 m. from Canada bay, 51° n., 55° 35' w. It is about as large as Belle Isle, North.

BELLE ISLE, STRAIT OF, the northern entrance to the gulf of St. Lawrence, running about 80 m. s.w. between Newfoundland and Labrador. Its width is about 12 m., but the navigation is difficult. On the n.w. side are several small bays.

BELLEVILLE, a city in St. Clair co., Ill., 14 m. e. of St. Louis, Mo., on the St. Louis, Belleville and Southern, and Illinois and St. Louis railroads; pop. '70, 8146. It is a productive region, on high ground; has a Roman Catholic academy; there are coal-mines in the vicinity. A large proportion of the population are Germans.

BELLING, WILHELM SEBASTIAN VON, 1719-79; a Prussian soldier, who, with a small force, coped with the whole Swedish army. He was a maj. gen. in 1762, and lieut. gen. in 1776. He was one of the bravest of hussars, and a favorite of Frederick the great.

BELLINGHAM, RICHARD, 1592-1672; b. England, governor of Massachusetts, elected in 1641 by six majority over John Winthrop. He was chosen twice afterwards, 1654 and 1656, and held the office until his death. When quite old he married a second wife, performing the service himself, but, as the publication of the banns was irregular, he was prosecuted for violating the law, was tried before himself as judge, and by himself acquitted. His sister Anne was a victim to the Salem persecution of witches.

BELLI'NI, LORENZO, 1643-1703; a Florentine anatomist and physician, who studied medicine under Redi. He was professor of anatomy at Pisa, and in Florence was physician to the grand duke Cosmo, and also senior consulting physician to pope Clement XI.

BELLMAN, KARL MIKAEL, 1740-95; the great lyric poet of Sweden. Like Pope, he was a precocious rhymist, and at 17 published a book, a translation from the German. In 1780, appeared *The Moon*, a satirical poem, and from 1765 to 1780 he was writing his *Fredman's Epistles* and *Fredman's Songs*. The mode of composition of these works was surprising. In the presence of none but confidential friends, B. would take a zither, shut his eyes, announce that the god was about to visit him, and go on improvising an ode in praise of love or wine, singing it to a tune of his own construction. While the verses which he wrote in the usual way are tame and without character, the compositions made in this state of ecstasy glow with color, ring with melody, and bear the impress of individual genius. The odes of B. breathe a passionate love of life; he is amorous of existence, and keen after pleasure; but after all the frenzy there is a pathos, a yearning that is sadder than tears. He is sometimes frantic, sometimes gross, but always ready at his wildest moments to melt into tears. B. had a grand manner, a fine voice, and a great gift of mimicry. He was a favorite companion of king Gustavus III. Several statues of B. are in existence, the best being a colossal bust in the public gardens at Stockholm, erected by the Swedish academy.

BELLOWS, HENRY WHITNEY, S.T.D., LL.D., b. Mass., 1814; a graduate of Harvard, and of Cambridge divinity school; in 1838, pastor of the first Congregational (Unitarian) church of New York, and still officiating there in 1880. Dr. B. was instrumental in establishing the *Christian Enquirer* in 1846. He has published a number of lectures and pamphlets, among the more notable his *Phi Beta Kappa Oration*, a *Defense of the Drama*, *Treatment of Social Diseases*, *Christian Doctrine*, *The Old World in its New Face*, etc. With an excellent literary taste and skill he combines practical and administrative ability. He did excellent service as presiding officer of the sanitary commission during the war of the rebellion.

BELLOWS FALLS, a village in Vermont, on the Central Vermont and Cheshire railroads, and on the Connecticut river, 52 m. s.e. of Rutland. There is a bridge across the river, and the village is noted for manufactures. The water-power is supplied by the falls, which with several rapids have a descent of 44 feet. These falls were the subject of absurd exaggeration by Samuel Andrew Peters, the tory clergyman of the church of England who wrote the notorious history of Connecticut. Pop. '80, 2228.

BELLOWS FISH, or **TRUMPET FISH**, *Centriscus scolopax*, found in the Mediterranean; it is spiny-rayed, of the tufted-gilled order, with a tubular snout and small mouth without teeth at the ends; body oval; spinous dorsal fins; ventrals united. It feeds by suction on minute crustacea. Its flesh is considered palatable.

BEL-MERODACH. See **MERODACH**.

BELMONT, a co. in e. Ohio, on the West Virginia border; intersected by a branch of the Cleveland and Pittsburgh, and the Baltimore and Ohio railroads; 525 sq.m.; pop. '70, 39,714; in '80, 50,014. The surface is hilly; soil good, producing grain, tobacco, potatoes, sorghum, dairy products, and wool. Bituminous coal is found. Co. seat, St. Clairsville.

BELMONT, a village in Missouri, on the Mississippi river, opposite Columbus, Ky. Here, Nov., 1861, a sharp conflict for possession of the place occurred between the union forces under gen. Grant, and the confederates under gen. Pillow. As B. was commanded by the guns of gen. Polk at Columbus, gen. Grant could not hold it, and fell back on his boats. Eighty-four union men and about as many confederates were killed.

BELOIT COLLEGE, at Beloit, Wis.; was organized in 1847, under Congregational and Presbyterian patronage. It has an endowment of \$140,000, and an annual income of \$15,000. The buildings are six in number, including chapel, memorial hall, and gymnasium, standing within a campus of 24 acres, on the Rock river. The laboratory and apparatus are valued at \$3000; the geological and mineral cabinet at \$2500. The library contains about 10,000 volumes. The number of professors (1880) is 8; other instructors, 2; students, 140; alumni, 272. Connected with the college and under the care of the faculty are collegiate, classical, philosophical, scientific, preparatory, and miscellaneous departments. Gymnastic exercises are maintained daily. The president is Aaron L. Chapin, D.D.

BELSHAZZAR (*ante*). In regard to the supposed discrepancies between the Bible and such writers as Berosus and Herodotus, sir Henry Rawlinson has recently shown that those writers not only do not contradict, but explain and confirm the account given in the Scriptures. It appears that the eldest son of Nabonedus was Bel-shar-azar, and was by his father admitted to a share in the government. Sir Henry says "we can now understand how Belshazzar may have been king in Babylon when the city was attacked by the combined forces of the Medes and Persians, and may have perished in the assault which followed, while Nabonedus, leading a force to the relief of the place, was defeated and obliged to take refuge in Borsippa, capitulating after a short resistance, and being subsequently assigned, according to Berosus, an honorable retirement in Carmania."

BELTRAMI, a co. in s.w. Minnesota, very little settled. It has several lakes, one of which, Itasca, is 1600 ft. above sea level. Some of its lakes empty into the Red river of the n., which carries their waters to the ocean through Hudson's bay and straits, while others are emptied by the Mississippi into the gulf of Mexico.

BELTS, endless strips of flexible material, usually leather or india rubber, to transmit motion or power from one pulley to another. Ropes and chains serve a similar purpose. When chains are used, the pulleys are provided with projections which engage in the links of the chains and prevent slipping, and the mechanism has the positive relations of a rack and pinion. Ordinary flexible belts transmit power by the friction between them and their pulleys. The pulley which communicates motion is the driving pulley; that which receives, the driven pulley; that part of the belt which runs from the driven pulley to the driver is the driving part of the belt, since it is pulled by the driver, and in turn pulls on the driven pulley; the part of the belt which runs from the driver to the driven pulley is the slack belt. The strain on the driving belt is the sum of the strain of the belt on the pulleys when there is no motion, plus the strain of the friction; that on the slack belt is the same strain on the pulleys less the friction. Thus, if a belt is stretched over its pulleys with a strain of 10 lbs. per in. of width, and it requires 5 lbs. to make it slip, then the strain on the driving belt is $10 + 5 = 15$ lbs., and the

strain on the slack belt is $10-5=5$ lbs., per in. of belt. As the two parts of the belt are unequally strained there will be a tendency to move, or *creep*, towards the driving belt over the driven pulley. Hence, the velocity ratio of the two pulleys will not exactly follow the inverse ratio of their radii, and the belt cannot be relied upon for giving uniformity of motion. For driving most machinery, the fact that the belt is elastic, and will slip if unduly strained, makes it a favorite method of communicating power. Rubber belts transmit about 25 per cent more power than leather, because the surface of the rubber conforms more perfectly to the minute inequalities of the pulley surface, and thus acquires a closer grasp. The texture of a rubber belt is more uniform than can be had in leather, and therefore a wide rubber belt will wear more evenly. In damp and exposed places, rubber is more durable than leather. If, however, the belt is to be shifted back and forth, as in the stopping and starting of some machines, or in cross belting—wherever the edge of the belt is liable to wear—leather is preferable. If the pulley be higher in the center than at the side, or higher at one side than at the other, the belt will creep towards the highest part; for this reason the surface of the pulley is usually made not cylindric, but of greater diameter at the center. If this be overdone, the belt does not pull, except along its central part. The pulleys usually lie in the same plane, and with their axes parallel; but this is not necessary, provided that the course of each part of the belt—the driving and the slack part alike—be in the plane of the pulley toward which that part of the belt runs; the belt being always delivered by one pulley into the plane of the other.

Transmission of power by B. is more common in the United States than in Europe. As extreme cases may be noted: a leather belt of the New Jersey zinc works, 4 thicknesses, 48 in. wide and 102 ft. long; a rubber belt in Chicago, 6 ply, 48 in. wide and 320 ft. long; a leather belt for a paper mill in Wilmington, Del., 60 in. wide and 186½ ft. long. Hempen or wire ropes, running over large pulleys with V shaped edges, are used to transmit power to long distances. The U. S. arsenal at Rock Island, Ill., carries more than half a mile by one rope the power of 4 large turbine wheels, sufficient for all the present need of the machine shops. Such cables have been called teleodynamic cables. They can be run as fast as one mile per minute, and without covering will last three years. Intermediate sheaves are required at every 300 or 400 feet. For information concerning the length of B. and the power transmitted, see RANKINE, MACHINERY AND MILL WORK, etc.

BELVIDERE', chief t. in Boone co., Ill., 78 m. w. of Chicago, on the Chicago and Northwestern railroad; pop. '70, 3231. There are flouring mills and other manufactories.

BEMAN, NATHANIEL S. S., D.D., 1785-1871; b. N. Y.; graduate of Middlebury college; studied for the ministry, and was pastor of a Congregational church in Portland, Me. About 1813 he was a missionary in Georgia, where he labored to establish better education. In 1822, he became pastor of the First Presbyterian church in Troy, N. Y., where he officiated more than 40 years, during which period he was prominent in the moral and political questions of the time. He was moderator of the Presbyterian general assembly in 1831, and in 1837 he was a leader of the New School section. He resigned his pastoral charge in 1863. Some of his addresses and sermons have been published, in a volume. He also published *Four Sermons on the Atonement*.

BENALCA'ZAR, or BELARCA'ZAR, SEBASTIAN, d. 1550; a Spanish sailor who became conqueror and governor of the province of Popayan, in Peru, in 1538.

BENDISH, BRIDGET, 1650-1727; grand-daughter of Oliver Cromwell, endowed with much of his mental and physical energy. She had great reverence for the protector, and once challenged to a duel with swords a fellow passenger in a stage coach who had spoken disparagingly of him. Her father was gen. Ireton.

BENEDETTI, VINCENT, Count, of Greek origin, b. Corsica, 1815. He has been French consul at Cairo and Palermo; secretary of legation in Constantinople; held office in the French department of foreign affairs, and was secretary during the negotiation of the treaty of Paris in 1856. In 1860, he went to Turin to negotiate the cession of Nice and Savoy; in 1864, he was ambassador to Berlin. B. was personally concerned in the affair of the protest of Napoleon III. against the candidacy of the prince of Hohenzollern for the throne of Spain, and forced himself upon king William in the public walk at Ems, July 13, 1870, in so offensive a manner that he was officially ignored thereafter. Four days afterwards France declared war. B. also accused Bismarck of originating a Franco-Prussian treaty in 1866 for neutral cessions of territory, but Bismarck showed that B. himself originated the scheme.

BENEDICK, or BENEDICT, the lover in Shakespeare's *Much Ado about Nothing*, who marries "Beatrice." The name usually written "benedict" is a synonym for a man recently married, the antithesis of "bachelor."

BENEDICTINE EDITIONS OF THE FATHERS, scarce and costly volumes containing the works of Barnabas, Lanfranc, Bernard, Anselm, Augustine, Cassiodorus, Ambrose, Hilary, Jerome, Athanasius, Gregory of Tours, Gregory the great, Hildebert, Irenaeus, Lucius Cæcilius, Chrysostom, Cyril of Jerusalem, Basil, Cyprian, Justin Martyr, Origen, and Gregory Nazianzen; in all 61 volumes.

BENEDICTINES (*ante*), an order of Roman Catholic nuns said to have been founded by St. Scholastica, a sister of St. Benedict. In Germany, where they had part in the conversion of the people, they look upon St. Walpurga as their founder. There are establishments in several of the United States, the earliest, in 1853, being that of St. Mary's in Pennsylvania.

BENEDIX, JULIUS RODERICH, b. 1811; a German dramatic author, an actor and vocalist, and in 1841 manager of a theater in Wesel, where he produced *The Old Foggy*, a comedy. Since then he has written more than 30 plays, some of which have been translated into English. He is the author of *Pictures from the Life of Actors*, and works on German legends, etc.

BENET, STEPHEN VINCENT, b. Fla., 1827; a graduate of the West Point military academy. He has translated Jomini's *Political and Military History of the Campaigns of Waterloo*; in 1862, he published *Military Law and the Practice of Courts-Martial*, which is received as a text-book at the academy. During the war he did service in several responsible positions in the ordnance department, and was brevetted lieut.col. In 1874, he became chief of ordnance, with the rank of brig.gen.

BEN'EZET, ANTHONY, 1713-84; b. France; a philanthropist, and one of the earliest opponents of the slave trade. He resided in Philadelphia, and left his property to endow a school for colored children.

BENFEY, THEODOR, b. 1809; professor of Sanskrit and comparative philology in the university of Göttingen. Some of his works are the *Hymn of Samaveda*, a Sanskrit grammar, a Sanskrit-English dictionary, and the *History of the Science of Languages and Oriental Philology in Germany since the commencement of the Nineteenth Century*.

BENHAM, HENRY W., b. Conn.; a West Point graduate, in the engineering service in the war with Mexico, and wounded at Buena Vista. In 1861, brig.gen. of volunteers; his rank since 1867 being col. of engineers. He has been employed in the coast survey and the construction of harbor defences.

BENICIA, the seat of justice of Solano co., Cal., and once capital of the state, on Carquinez strait, between Suisun and San Pablo bays, 30 miles n.e. of San Francisco; pop. '70, 1656. It has a good harbor, with steam communication with San Francisco. There are tanneries, flouring mills, and cement work, a collegiate institute, a law school, and St. Augustine (Episcopal) theological seminary. The U. S. military depot is here.

BENJAMIN, JUDAH PETER, b. San Domingo, 1812, and came with his parents to Savannah in 1816. He studied at Yale, and began the practice of law in New Orleans. In 1852, he was elected U. S. senator as a whig, and in 1859 re-elected as a democrat. He was among the earliest of the secessionists in the congress of 1860-61, leaving the senate in February of the latter year, and becoming attorney-general of the confederacy. When the rebellion was suppressed, he left the country and has since resided in London, where he has an extensive practice in the law.

BENJAMIN, PARK, 1809-64; b. Demerara; graduate at Trinity college, Hartford; practiced law in Boston in 1832, and was an editor of the *New England Magazine*. In 1837, he removed to New York and became one of the editors of the *American Monthly Magazine*, and two years later assisted Horace Greeley in editing *The New Yorker*. In 1841, he was one of the editors of the *New World*, retiring in 1843. He wrote many poems, essays, reviews, etc.; but no collected edition of his works has been made. In person he was large and apparently very robust; but an early sickness deprived him of the use of his legs.

BENNET, HENRY, earl of Arlington, 1618-85; a distinguished English statesman in the reign of Charles II. In the beginning of the civil war he was under-secretary to lord Digby, the secretary of state. He afterwards volunteered in the royal cause, and did good service, especially at Andover, where he was wounded. He was made secretary to the duke of York; in 1658, knighted by Charles, at Bruges, and sent as envoy to the court of Spain. On the king's return to England, B. was called home, and made keeper of the privy purse and principal secretary of state. In 1670, he was one of the council that got the nickname of the "cabal," and one of those who advised shutting up the exchequer. In 1672, he was made earl of Arlington and viscount Thetford, and soon afterwards a knight of the garter. His *Letters to Sir William Temple* were published after his death.

BENNETT, JAMES GORDON, b. Scotland, Sept. 1, 1795, d. N. Y., June 1, 1872. He was intended for the priesthood by his parents, who sent him to a Roman Catholic seminary; but in 1819, he migrated to America, and began teaching in Halifax, N. S. In the autumn of that year, he reached Boston and took the situation of proof-reader in a publishing house, and while there made his first literary venture in fugitive poems. In 1822, he was on the *Charleston Courier* as Spanish translator and special writer. Coming to New York, he undertook to start a commercial school, but abandoned the idea and took to lecturing on political economy. In 1825, he owned the *New York Courier*, a short-lived Sunday journal. Then he became a casual reporter and writer, now technically called a "Bohemian;" in 1826, he obtained regular employment on Snowden's

National Advocate, and was active as a politician. In 1827, he wrote for the *New York Enquirer*, edited by Mordecai M. Noah, and in 1828 was its Washington correspondent. The next year the *Enquirer* was united to the *Courier*, and in the autumn B. became associate editor of the *New York Courier and Enquirer*. In 1832, in consequence of a difference of opinion about the U. S. bank between him and James Watson Webb, the responsible editor, B. left the *Courier and Enquirer*, and in October issued the *New York Globe*, which lived four weeks. He next appeared as a share-owner in the *Pennsylvanian*, of Philadelphia, and in 1833 was chief editor. In 1834, he returned to New York, and on Wednesday morning, May 6, 1835, he issued from the basement of No. 20 Wall street, No. 1 of the *Herald*, price one cent. It had four pages of four columns each, the whole surface of print being a little less than $3\frac{1}{2}$ sq.ft., of which one quarter was occupied by advertisements. The *Herald* issues now (1880) on Sundays occasionally sheets of 24 pages of 6 columns, or 144 columns, having a printed surface of 48 sq.ft., of which two thirds are taken by advertisers. The cost of advertising in the first number was 50 cents for 16 lines; at present the same number of lines costs \$6.40. In the opening editorial, B. announced his independence of parties, cliques, and factions, and proposed to publish simply an independent newspaper. On the 11th of the month the second number was issued, and contained the "money," or "Wall street" article, a department now indispensable to a morning newspaper in any commercial city. For some time all the editorials, reports, etc., were written by the editor himself, who often wrote in the first person, and with a pungency that secured attention and circulation. He took immediate advantage of ocean steamers and the telegraph to secure news, and his paper reported through Morse's experimental wires the first speech ever sent by telegraph to any journal, that of John C. Calhoun on the war with Mexico. The *Herald* was the first daily paper to issue on Sundays, and the first to publish on every day in the year. Hesitating at no trouble or expense, and availing himself of the steamship, the telegraph, the horse-express, and the post-office, B. soon made the *Herald* widely known as what he meant it to be—a newspaper, to increase the importance and value of which was the sole ambition of his life. He left two children, a daughter and James Gordon, Jr., bequeathing the *Herald* entire to the son, who continues it with the spirit and enterprise of the founder.

BENNETT, JOHN HUGHES, 1812-75; b. London. He was educated at Exeter and Edinburgh, and studied in Paris and Germany. He was for 26 years professor of the institutes of medicine in Edinburgh university. He was an able teacher, and his original investigations entitle him to a high place in the history of medicine. His best known publications are *Clinical Lectures*, *Treatise on Physiology*, and *Text-Book of Physiology*.

BENNINGSEN, RUDOLF VON, b. 1824; a Hanoverian statesman who was elected in 1866 (after the annexation) to the North German diet and the Prussian assembly, becoming vice-president of both bodies and a prominent liberal leader. He has also superintended the administration of government in the province of Hanover.

BENNINGTON, a co. in s.w. Vermont, on the Massachusetts and New York lines; drained by Hoosac river, reached by the Rensselaer and Saratoga railroad; 700 sq.m.; pop. '70, 21,325. It is famous for quarries of fine marble, and is a good agricultural region. Co. seats, Bennington and Manchester.

BENNINGTON, a t. in B. co., Vt., 35 m. n.e. of Albany, N. Y., on the Harlem Extension railroad; pop. '70, 5769. It has important manufactories of parian ware and porcelain from materials abundant in the neighborhood. There is an observatory on Mt. Anthony, near the village. The "battle of B." was fought Aug. 16, 1777, when gen. Stark, leading a force of New Hampshire militia, defeated col. Baum and a detachment of Burgoyne's army. The English lost 100 killed, 600 prisoners, and 1000 stands of arms; the Americans lost 14 killed and 42 wounded.

BENSON, JOSEPH, 1748-1821; an English preacher; he was educated for the established church, but became a Methodist and succeeded Wesley as president of the conference of the church. He was editor of the *Wesleyan Magazine*, and author of three works in especial defense of the Methodists, *Sermons on Various Occasions*, *Life of John Fletcher*, and *Commentary on the Holy Scriptures*.

BENT, a co. in e.s.e. Colorado, on the Kansas border, bounded on the s. by the Arkansas river, and intersected by the Kansas Pacific, and the Atchison, Topeka and Santa Fe railroads; pop. '70, 592; in '80, 1674. The surface is level. Productions chiefly agricultural. Co. seat, Las Animas.

BENTIVOGLIO, GIOVANNI; 1438-1508; chief magistrate of Bologna, while it was a republic, continuing his father's rule with great severity; but "his encouragement of the fine arts and his decoration of the city by sumptuous edifices, gilded his usurpation." He was expelled by pope Julian II. in 1506, and died in Milan.

BENTON, a co. in n.w. Arkansas, bordering on Missouri and the Indian territory; 900 sq.m.; pop. '70, 13,831—182 colored. The chief business is agriculture. Co. seat, Bentonville.

BENTON, a co. in Indiana, bordering on Illinois; intersected by the Bloomington division of the Wabash, and the Cincinnati, Lafayette and Chicago railroads; 414 sq.m.; pop. '70, 5615. It has fertile prairie soil, with some forests. Co. seat, Oxford.

BENTON, a co. in Iowa, on the Cedar and Iowa rivers; intersected by the Burlington, Cedar Rapids and Northern, and the Chicago and Northwestern railroads; 720 sq.m.; pop. '75, 22,807; in '80, 24,868. Its surface is undulating prairie and woodland; chief business, agriculture. Co. seat, Vinton.

BENTON, a co. in Minnesota on the Mississippi river; intersected by the St. Paul and Pacific railroad; 400 sq.m.; pop. '75, 1974; in '80, 3017. It is an agricultural region, drained by St. Francis, Elk, and Little Rock rivers. Co. seat, Sauk Rapids.

BENTON, a co. in Mississippi on the Tallahatchie river and the Tennessee border; recently organized. Co. seat, Ashland.

BENTON, a co. in Missouri on the Osage river and its tributaries; 770 sq.m.; pop. '70, 16,322—320 colored. It is a good agricultural region, and has lead mines. Co. seat, Warsaw.

BENTON, a co. in Oregon, between Willamette river and the Pacific ocean; 1200 sq.m.; pop. '70, 4584. The surface is mountainous, but good for grazing and the hardier grains. Co. seat, Corvallis.

BENTON, a co. in n.w. Tennessee on the T. river; crossed by the Nashville and Northwestern railroad; 400 sq.m.; pop. '70, 8234—452 colored; in '80, 9856; a good agricultural region. Co. seat, Camden.

BENTON, THOMAS HART, b. N. Y., Mar. 14, 1782; d. Washington, April 10, 1858. His family went to Tennessee, where he studied law and was elected to the legislature, where his first work was to reform the judiciary and to secure to slaves the right of trial by jury. In the war with England, B. was one of Jackson's aids, and raised a regiment of volunteers. In 1815, B. settled in St. Louis, and established the *Missouri Inquirer*, a journal that occasioned for him a number of duels, in one of which he killed his opponent. He advocated the admission of Missouri as a slave state, and after the famous compromise in 1820, was chosen U. S. senator. He was regularly re-elected, so that he was senator for 30 successive years, during all of which period he was conspicuous as a leader on almost every important question. One of his long prosecuted plans was to amend the constitution so that the people could vote directly for president, or come as near as possible to such a system. This project he brought forward several times, but it never came near adoption, all friends of caucus nominations and secret machine work in politics naturally opposing it. One of his hardest fights was in opposing the re-chartering of the U. S. bank, when he advocated the establishment of a currency of gold and silver only, for which idea he was long called "Old Bullion." After the charter had passed and president Jackson had vetoed it, the senate adopted a resolution censuring the president; but B., not long after, moved to expunge that resolution from the record, and carried his point after a long and fierce contest. Among other measures advocated by B. were the pre-emption of public lands, a railroad to the Pacific, the abolition of the salt-tax, and opening mineral lands to settlement. In the Oregon boundary question with Great Britain he took a leading part against the "fifty-four forty or fight" advocates, and his influence greatly conduced to the retreat of Polk's administration from an extreme position. He opposed the compromise measures of Henry Clay in 1850, and they were defeated as a whole, but adopted separately. He was friendly with Calhoun until the nullification episode, and thenceforth for a long period his enemy. Two years after his long service in the senate, B. was chosen to the other house, where he opposed the Kansas-Nebraska bill and failed of re-election on that account. In 1856, he was a candidate for governor of Missouri, through a "Native American" side issue. At the same election he supported Buchanan for president, although his own son-in-law, Fremont, was the opposing candidate. Benton's *Thirty Years' View* is a well known and valuable political retrospect of his experiences and observations in the senate. He also made an *Abridgment of the Debates in Congress from 1789 to 1856*, in 15 large volumes.

BENTONSVILLE, a village in Johnston co., N. C., where, Mar. 16, 1865, the confederates under Johnston undertook to capture the left wing of Sherman's army, then marching to join Grant. They were resisted by gen. Slocum and Kilpatrick's cavalry, and failed. The union loss in killed and wounded was 1600; confederate loss not known, but there were 267 dead on the field and 1600 prisoners.

BENT TIMBER, produced by a modern method; usually made of planks bent to the desired curve and fastened together to form beams. A beam thus formed is stronger than if bent in a whole piece. At first the timber was steamed, but that course has been generally abandoned, as the steam injures the wood.

BENZIE, a co. in n.w. Michigan on lake Michigan; 440 sq. m.; pop. '74, 2663. The chief business is agriculture. Co. seat, Benzonia.

BENZOIN ODORIFERUM, the benjamin tree or spice bush, properly *Lindera benzoin* of the laurel order. It has an aromatic bark, used as a tonic and stimulant in intermittent fevers.

BÉRARD, FRÉDÉRIC, 1789-1828; a French physician and writer on physiology, educated at Montpellier, and employed in Paris on the *Dictionary of Medical Sciences*. He held a chair of medicine in Paris, and was a professor of hygiene in Montpellier, where he died from excessive work at the age of 39. His most important work is *Des*

Rapports du Physique et de Moral, in which he holds that the soul and the principle of life are in constant reciprocal action, and the first owes to the second not the formation of its faculties, but the conditions under which they are evolved.

BERBER, EL MEKHEIR, or EL MESHERIF, a t. on the e. bank of the Nile, below the confluence of the Atbara, about 18° n., 34° e. It is important only as one of the main stations on the direct route from Khartoum to Cairo, and as the starting-place for caravans going to Suakin, on the eastern coast. Pop., estimated, 8000.

BERBERINA, or BERBERINE, an alkaloid in the barberry, columbo, yellow root, and other plants, appearing in minute yellow crystals of bitter taste. Its formula is $C_{40}H_{17}O_8$. There is an impure muriate called hydrastin, sometimes used as a medicine.

BERCHTESGADEN, a principality of Bavaria, adjoining the Austrian duchy of Salzburg, and forming the extreme s.e. corner of the German empire; 155 sq.m.; pop. 9500. It is a rough mountain region, unfit for agriculture or even pasturage; but the scenery is magnificent. The König's lake, nearly surrounded by mountains, has on its shore at St. Bartholoma, a chapel much frequented by pilgrims. There is also a chapel of ice. The main industry of the people is the manufacture of toys, known in commerce as Berchtesgaden wares.

BERE'A COLLEGE, in Madison co., Ky., 40 m. s. of Lexington, was originated by John G. Fee, a minister, son of a slaveholder, but a zealous opponent of the system. For this opposition his father and his church disowned him. Always under suspicion, the college was suppressed, after the John Brown affair, and its officers were driven from the state. After peace it was revived, and has prospered greatly, having an annual average of nearly 300 students, of whom about 60 per cent are males and about 60 per cent colored persons. There has never been any trouble about color or sex in the institution. The curriculum is about the same as in other colleges. The college was opened in 1858. At last report there were the president, Rev. E. H. Fairchild, and 12 professors and instructors, and 31 students of the college grade.

BEREGH, a co. in Hungary, s.w. of Galicia; 1439 sq.m.; pop. '70, 159,223, about half Ruthenians, and the remainder Magyars, with the exception of 8000 Jews, Germans, etc. It is mountainous and barren in the n., but fertile in the s., producing excellent wine. Capital, Berigszasz; pop. 6272.

BERESFORD, JAMES, 1764-1840; an English author, educated at Oxford, and a rector in Leicestershire. His *Miseries of Human Life*, a satire in prose, is well known.

BERGEN, a co. in New Jersey on the Hudson river; intersected by the Erie, New York and Oswego Midland, and Northern New Jersey railroads; 350 sq.m.; pop. '70, 30,122. The chief geological feature is the Palisades, a perpendicular wall of rock forming the w. bank of the Hudson through the entire county, rising from 300 to 500 ft. above the water. The county is intersected by the Hackensack, Ramapo, and Saddle rivers. Market gardening for New York is a leading industry. Co. seat, Hackensack. Among its population are many descendants of the early Dutch settlers.

BERGEN, a province in s.w. Norway, on the Atlantic; area, including a part of Romsdal, 18,549 sq.m.; pop. '75, 356,561. The coast is indented by many fjords or gulfs, the largest being Hardanger Fjord. There are high mountains all over the province, but in the valleys around the fjords and streams, good pasturage is found. Cattle breeding and the herring fisheries are the main occupations. There are marble, and ores of copper and iron, but none are worked owing to want of fuel. Capital, Bergen.

BERGH, HENRY, b. N. Y., 1823; educated at Columbia college, and author of several works of fiction, among them a drama called *Love's Attractions*, *Married Off*, *The Ocean Paragon*, *The Streets of New York*, etc. He was secretary of legation at St. Petersburg in 1863, and subsequently vice-consul. Nearly 20 years ago he became interested in the treatment of domestic animals, and in face of much opposition he succeeded, in 1866, in getting an incorporation of the "American Society for the Prevention of Cruelty to Animals." The work of the society commended itself to the better class of the people, and its growth was rapid and substantial. The report for the first year showed 101 prosecutions; 41 for beating horses or other animals with clubs, whips, etc.; 10 for conveying animals in a cruel and inhuman manner; 15 for driving horses unfit to be used; 3 for overloading; 12 for starving or abandoning horses or other animals; and 20 for various acts of cruelty to cattle, dogs, cats, poultry, etc. In the thirteen years ending with 1878, there were 6809 prosecutions, including, besides the offenses named, driving horses until they fell dead, dragging horses with broken legs through the streets, selling diseased animals, plucking poultry while alive, dog and cock fighting, using instruments of torture, malicious mutilating, wounding, or poisoning of animals, etc. When the society began operations, the common method of transporting sheep and calves was by tying their legs and piling them one on another in a truck, the driver not seldom seating himself comfortably upon the agonizing heap, and taking his ease, while they bleated and groaned beneath him. Now such animals are carried standing in large cages. The main room of the society contains a curious collection of the bits, spurs, gags, fetters, goads, and other instruments of torture heretofore used. t.t

to be shown with similar engines employed in the palmy days of the Spanish inquisition upon men and women who failed to believe in the dogmas held by their tormentors. Since the organization of Mr. B.'s society, 13 branches have been started in the state of New York. In the other states of the union and in Canada, there are now 62 societies devoted to the same object; and England and other foreign countries have followed the example. In Nov., 1878, the "International Society of America" held its first session to consider the question of the transportation of cattle. It must be added that the humane work begun by Mr. B. soon enlisted the sympathies of women, and some of his ablest assistants and most generous donors are found among the estimable ladies in New York and elsewhere. The present society has for six years published a journal to advocate its purposes, and its drinking hydrants for man and beast in various parts of the city and the parks keep it in constant memory.

BERIOT, CHARLES AUGUSTE DE, 1802-70; a composer and violinist, b. in Louvain. He was a precocious and original musician, remarkable for pure tone and refined taste. In 1835, he became the husband of the famous singer, Malibran. In 1842, he was made professor in the Brussels conservatoire, but resigned ten years after in consequence of failing eyesight. He was the author of a complete manual for the violin, and of a great number of popular compositions for that instrument.

BERKELEY, a co. in n.e. West Virginia, between two branches of the Potomac, intersected by the Baltimore and Ohio railroad; 250 sq.m.; pop. '70, 14,900-1672 colored; in '80, 17,412. The surface is rough and not easily cultivated, but much grain, butter, and wool are produced. Co. seat, Martinsburg.

BERKELEY, MILES JOSEPH, an English botanist, b. 1803; educated at Cambridge, a curate at Margate, and dean of Weldon. He is a fellow of the Linnæan and many other scientific societies; author of *Gleanings of British Algae*, of the concluding volume of *English Flora*, articles on *Diseases of Plants*, papers on vegetable pathology, an introduction to *Cryptogamic Botany*, and works on fungi, mosses, etc.

BERKELEY, Sir WILLIAM, d. 1677; Governor of the colony of Virginia in 1641, keeping the colony loyal to the king until compelled by his friends to submit to Cromwell, 1651, when Richard Bennet was made governor. B. remained in the colony, and in 1660 was chosen governor by the general assembly. Years later he lost the favor of the people by failing to protect them from the Indians, and a rebellion against him led by Nathaniel Bacon (q.v.) almost succeeded, but failed in consequence of the sudden death of the leader. He was recalled in 1677. B. was the author of *A Discourse and View of Virginia* and a drama called *The Lost Lady*.

BERKELEY SPRINGS, or BATH, a t. and seat of justice of Morgan co., W. Va., near the Potomac, 77 m. w. of Washington; pop. 70,407. Persons suffering from dyspepsia, neuralgia, and chronic rheumatism, are benefited by the water.

BERKS, a co. in s.e. Pennsylvania, on the Schuylkill, intersected by the Philadelphia and Reading, and Wilmington and Reading railroads; 920 sq.m.; pop. '70, 106,701. The Blue mountains are on the n.w., and the South mountain, or the Blue Ridge, traverses the central s.e. portion. The valley soil is fertile and well cultivated, and there are iron and copper mines of value. B. was settled by Germans more than a century ago, and its people still speak "Pennsylvania Dutch," together with English. Co. seat, Reading.

BERKSHIRE, a co. in Massachusetts, forming the entire w. border of the state; crossed by the Boston and Albany, the Pittsfield and North Adams, and the Housatonic railroads; 1000 sq.m.; pop. '78, 68,270. The surface is greatly diversified by mountains, forests, and streams. Saddle mountain is the highest point in the state. Grazing is a leading feature. Marble, limestone, and iron are found, and there are many manufactories of wool, cotton, leather, flour, paper, lumber, etc. The picturesque scenery has attracted from the large cities many residents, who have embellished the region with elegant rural homes. Co. seat, Pittsfield.

BERLEBURG, or BERLEBURGER, BIBLE, published by unknown editors at Berleburg, in Germany, 1726-29. It is an original translation, with a running exposition, giving the literal, spiritual, and hidden or mystical interpretation. It has the characteristic excellences and defects of pietism.

BERLIN, a city in Green Lake co., Wis., 94 m. w. of Milwaukee, on Fox river, reached by a branch of the Chicago, Milwaukee and St. Paul railroad; pop. 3341; in '80, 3375. It has several manufactories, and steam communication with Green bay, through lake Winnebago, and the lower Fox river.

BERLINGHIERI, ANDREA VACCA, 1772-1826; an Italian surgeon, the head of a school of clinical surgery in the university of Pisa, who constructed instruments for operations in cystotomy, fistula, fracture of the femur, etc.; he improved other instruments, and wrote on professional subjects.

BERMEJO, or VERMEJO, a river rising in Bolivia, flowing through several Argentine provinces, and joining the Paraguay about 30 m. above the mouth of the Parana. Its length is 1200 m., or double that of the direct line from head to mouth.

BERMUDA GRASS, recently brought to the southern states from India; valuable both for pasturage and hay, especially in warm regions.

BERN, or BERNE, CONFERENCE or DISPUTATION OF, held in 1528, led to the establishment of the reformation in Bern. Some years before, the bishop of Lausanne demanded the indictment of certain preachers of reform doctrines, but the city council refused to interfere. The conflict increased steadily until, in Nov., 1527, the great council decided to settle disputes by appeal to the Word of God. Invitations were sent to the principal bishops, and the leagues of both parties were asked to send delegates and learned men. The bishops declined, and Charles V. advised trust and recourse to the anticipated general council. But the B. council was held, and the event is considered to have been the turning-point in favor of the reformation. An account of the debates is found in D'Aubigne's *History of the Reformation*.

BERNALILLO, a large co. in New Mexico, bordering in part on Texas; 3000 sq. m.; pop. '70, 7591. It is watered by the Rio Grande del Norte, Rio de San Jose, and Rio Puerco. Co. seat, Albuquerque.

BERNARD, Sir FRANCIS, 1714-76; a colonial governor of Massachusetts and New Jersey; an English lawyer who favored the crown and brought troops into Boston, proroguing the general court because that body refused to vote supplies for the soldiers. In 1869, he was recalled, and his departure was made an occasion of general public rejoicing.

BERNARD, JACQUES, 1658-1718; a native of Dauphiny, professor of philosophy and mathematics, and minister of the Walloon church at Leyden. He was educated at Geneva, and was minister over two churches in France, but was obliged to leave the country because he persisted in preaching the reformed doctrines in opposition to the royal ordinance. In Holland he was well received. He wrote an *Abridgment of the History of Europe* (unfinished), and began *Historical Letters* (continued by others). He wrote much for the *Bibliothèque Universelle*; *Negotiations, etc., at the Peace of Ryswick*; and continued Bayle's *Nouvelles de la Republique des Lettres*.

BERNARD, SIMON, 1779-1839; a French engineer and gen.; aid to Napoleon; educated in the Paris polytechnic school. He served in several campaigns after 1800, and was conspicuous for defending Torgau for three months during a vigorous siege. He adhered to the restoration, but was ordered to leave France, which he did under permission to go to the United States. In this country he was employed by the government in devising canals and roads for connecting the great lakes and rivers, and also in coast defense and frontier fortifications, projecting fortress Monroe, and some of the defenses around New York. After the revolution of 1830, he returned to France, and prepared plans for the fortification of Paris. He was minister of war in 1834, and again in 1836-39.

BERNARDO DEL CARPIO, son of Don Sancho de Saldanha and Ximena, the sister of Alfonso II. of Leon, who had been secretly married. On learning of the affair the king imprisoned Don Sancho and had his eyes put out, and the wife was sent to a convent. The boy was brought up at court and gained early renown in the wars against the Moors, becoming one of the most famous soldiers of the 9th century. Incensed because he could not obtain his father's liberty, B. went over to the Moors and established himself in the strong castle of Carpio, whereupon the king promised to release the father if B. would surrender the fortress. It is uncertain what became of the father, who was not set free; but history states that B. went to France, where he became a wonderful knight errant. His name occurs frequently in romance, chronicles, ballads, and plays, and is the title of an epic poem published in 1624. Lope de Vega makes him a national hero and the conqueror of Roland at Roncevalles.

BERNARD OF CLUNY, monk of Cluny, under the abbot Peter the venerable, about 1222-56; author of a long poem in Latin called *Contempt of the World*, which ranks with *Dies Ira*, *Stabat Mater*, and other mediæval church literature. Several modern hymns are portions of B.'s poems, such as *Jerusalem the Golden*, *Brief Life is here our portion*, etc.

BERNERS, or BARNES, LADY JULIANA, prioress of Sopewell nunnery, near St. Albans, England, was a daughter of the sir James Berners who was beheaded in the reign of Richard II. The daughter was celebrated for beauty, spirit, and passion for field sports. One of the earliest productions of English printing is attributed to her pen: *The Treatyses pertynyng to Hawkyng, Huntynge, and Fysshynge with an Angle; and also a right noble Treatyse on the Lignage of Cot Armours, endynge with a Treatyse which specifyeth of Blasyng of Armys*. A part of this was printed as early as 1486. The information on hunting is hitched into rhyme, but has no discernible relation to poetry.

BERNHARDT, SARA, b. about 1845; the daughter of a Jewish father and a Dutch mother. The mother brought her, a mere child, from Amsterdam to Paris, and placed her in a convent at Versailles, where she remained several years. On leaving the convent she was asked what she intended to become. The reply was, "An actress at the Comédie Française, or a nun." Obtaining admission to the conservatoire she soon exhibited marks of talent. She made her first appearance in 1862 as *Iphigenia*, in Victor Hugo's version

of the old Greek tragedy of *Iphigenia in Aulis*, and she was at once successful. Afterwards at the Comédie, at the Gymnase, at the Porte St. Martin, and others, she appeared in such plays as *Phædre*, *Britannicus*, *The Marriage of Figaro*, *The Stranger*, *Rome Vaincu*, etc., always with increasing success. Perhaps her strongest character is *Donna Sol*, in Victor Hugo's *Hernani*. In 1879, she appeared in London with great success. Efforts, thus far unsuccessful, have been made to bring her to the United States. She is not only an actress of wonderful brilliancy, but a sculptor of no mean repute, and also something of a painter. In person she is remarkable; a thin, attenuated, nervous organization, but little more than a skeleton, but as full of life as the most robust of creatures. Her private life is peculiar: she dresses for the most part in trousers and pea-jacket, a suit that might well enough be worn by a man, and she exercises all the legitimate freedom that might become a young and independent bachelor.

BERNOULLI, JACQUES, brother of the third John, b. 1759. His inclination was towards geometry, in which he received instruction from his father and afterwards from his uncle Daniel. At the age of 21 he undertook the duties of the chair of experimental physics, which his uncle resigned on account of old age. He advanced rapidly, and soon became a member of each of the scientific societies of the continent. In 1789, he married a grand-daughter of the great mathematician, Euler, but the wedding was followed in a few weeks by the drowning of the husband in the Neva. His papers are in the Acts of the St. Petersburg academy, and in other academical memoirs.

BERNOULLI, JEAN, 1710-90; youngest brother of Nicolas; he studied mathematics and law, and was for five years professor of eloquence in the university of Basel. He succeeded his father as professor of mathematics, and was thrice a successful competitor for prizes of the Paris academy of sciences. He was a friend of Maupertius, who died in his house.

BERNOULLI, JEAN, 1744-1807; one of the three Bernoullis named John, distinguished in science—grandfather, father, and son. At the age of 13 he took the degree of doctor in philosophy, and at 19 was made astronomer royal of Berlin. He traveled in England and over Europe, and his writings consist of travels, and works on astronomy, geography, and mathematics. In 1774, he published a French translation of Euler's *Elements of Algebra*.

BERNOULLI, NICOLAS, 1695-1726; the eldest of three sons of John B., the mathematician. Nicolas at the age of 8 could speak German, Dutch, French, and Latin; at 16 he took the degree of doctor in philosophy from the university of Basel, and at 20 he received the highest degree in law. He filled the chair of jurisprudence at Bern, and he and his brother Daniel were at the same time professors of mathematics in the academy of St. Petersburg, where Nicolas died at the age of 31. The empress Catherine honored his memory with a public funeral.

BERNOULLI, NICOLAS, 1687-1759; cousin of Nicolas, Daniel, and John, son of a senator of Basel. He was a friend of Newton and Halley, visiting them in England. He filled the mathematical chair at Padua, once occupied by Galileo, and was professor of logic and law at Basel. He edited some of his uncle James' works, and his own writings are in the *Acta Eruditorum*, and the learned publications of the period.

BERNSTORFF, ANDREAS PETER, Count, 1735-97; cousin of Johann, and also a statesman of Denmark, privy counselor, and minister of foreign affairs. He first proposed armed neutrality to Sweden. Late in life he prepared for the abolition of serfdom in Schleswig-Holstein, and gave full liberty to the press of that duchy.

BERNSTORFF, JOHANN HARTWIG ERNST, Count, 1712-72; a Danish statesman who was the representative of the government at the diet of Ratisbon; minister to France, secretary and counselor of state, and member of the privy council in charge of foreign affairs. Frederick the Great styled B. the "Oracle of Denmark." Struensee put him out of office in 1770, but he was recalled two years later, just before his death.

BERŒ'A, or BERE'A, a city of ancient Macedonia, at the foot of Mt. Bermius, visited by St. Paul, who preached there. The modern Veria, 35 m. w. of Salonica, is on or near the site of Berœa.

BERRIEN, a co. in Georgia, on the Alapaha and Little rivers; intersected by the Brunswick and Albany railroad; 750 sq.m.; pop. '70, 4518—450 colored. Surface level, with much woodland. It produces corn, rice, cotton, etc. Co. seat, Nashville.

BERRIEN, a co. in s.w. Michigan, bordering on Indiana; intersected by the Chicago and Michigan, the Lake Shore, and the Michigan Central railroads; 600 sq.m.; pop. '80, 36,736; drained by the Pawpaw and St. Joseph's rivers. The surface in nearly level; the soil a deep loam, bearing forests of hard timber. Productions entirely agricultural. Co. seat, Berrien Springs.

BERRIEN, JOHN MACPHERSON, 1781-1856; b. N. J.; a lawyer, solicitor, and afterwards judge of the eastern district of Georgia; member of the Georgia legislature and of

the U. S. senate; attorney-general in Jackson's first cabinet; elected again to the senate in 1840, and in 1846.

BER'SERKER (*bare serk*, or only in a shirt; i.e., without mail), a class of combatants among the early Norse people whose love of fighting led them to a fury of madness. They were so wild that chains could hardly restrain them. Friend or foe, bare breast or buckler, stick or stone, dead or living, all were the same to the berserker when the fit was on, and he wandered aimlessly forth, "running an Indian muck at all he met." In later times the title was given to companies of hard fighters who were retained as body guards or special champions of renowned leaders. These periodical fits of rage were called the "berserk's course." When under his mad influence, the B. was a raging wolf to his friends and an armed maniac to his enemies. In the *Ynglinga Saga* we read: "But his (Odin's) men rushed forward without mail, and were as mad as dogs and wolves, and bit upon their shields, and were as strong as bears or bulls. Men slew they, and neither fire nor iron laid hold upon them."

BERTHIER, a co. in Canada, province of Quebec, on the St. Lawrence river, above lake St. Peter; fronting about 10 m. on the river and running back without definite bounds into the unexplored region below Hudson's bay; pop. '71, 19,804. Chief town, Berthier, 46 m. e. of Montreal.

BERTHOLD OF RATISBON, about 1215-72; a Franciscan friar and famous outdoor preacher, working in Switzerland and Germany. His sermons have been published in modern German.

BERTIE, a co. in North Carolina, on Albemarle sound, between the Chowan and Roanoke rivers; 900 sq.m.; pop. '70, 12,950-7437 colored. Level and fertile, producing corn, sweet potatoes, cotton, etc. Co. seat, Windsor.

BERTRAND DE BORN. See **BORN**.

BESSEMER, HENRY, b. England, 1813; an engineer, and inventor of many machines and improvements, particularly in reference to the manufacture and use of the metal known as Bessemer steel. (See **BESSEMER PROCESS**, *ante*.) One of his latest inventions is the "Bessemer saloon" for the avoidance of sea-sickness, which proved to be a failure. Prizes and other honors have been conferred on B. by a number of governments and societies.

BETH (*Heb.* "house"), used in the Old Testament as a part of the name of places, as "Beth-el," house of God; "Beth-aram," house of the height; "Beth-esda," house of mercy, etc.

BETHANY, a village in West Virginia, 10 m. e. of Wheeling. Bethany college was founded in 1841 by Rev. Alexander Campbell, the head of the sect of Baptists calling themselves "Disciples of Christ," and by the world at large known as "Campbellites." At last report the college has six professors and instructors and 105 students; W. K. Pendleton, LL.D., is the president.

BETHIEL, a t. in Oxford co., Me., 70 m. n.n.w. of Portland, noted for attractive scenery of mountains and water-falls; among the more conspicuous are Glass Face and White Cap mountains, and Partridge, Rumford, and Screw Auger falls. The White mountains, 25 m. away, can be seen from the town.

BETH-HORON ("house of the hollow"), two villages of Palestine, 9 to 12 m. from Jerusalem, upper and lower; built by Sherah, a woman of Ephraim. Joshua drove the five kings of the Amorites down the pass of the lower Beth-Horon, and Solomon fortified both places. From Jerome's time until the beginning of the 19th c. the towers seem to have been unnoticed. The present villagers are known as "Upper" and "Lower Beit-ur."

BETHLEHEM, a village in Grafton co., N. H., much frequented by visitors to the White mountains; 5 m. from Littleton; pop. about 1000. Its situation is high, commanding beautiful views; and its atmosphere is found beneficial to sufferers with "hay-fever."

BETHLEHEM (*ante*), a village in Pennsylvania, on the Lehigh river, at the terminus of the North Pennsylvania railroad, 51 m. n. of Philadelphia; founded by Moravians in 1741; pop. '80, 5195. It is a place of summer resort, and noted for manufactories of iron and zinc. The Moravians (United Brethren) have a fine church, a seminary for women, and other educational and benevolent institutions. In 1866, the Lehigh (Episcopal) university was established in South Bethlehem, chiefly through the generosity of Asa Packer, who gave it 56 acres of land and half a million of dollars. In 1878, there were 14 professors and instructors, and 113 students; John M. Leavitt, D.D., president.

BETHUNE, GEORGE WASHINGTON, D.D., 1805-62; b. New York; son of a Scotch merchant and philanthropist; educated at Dickinson college and Princeton theological seminary; in 1828 pastor of a Dutch reformed church at Rhinebeck; then at Utica, N. Y.; and in 1843 in Philadelphia. In 1849 he took charge of a newly formed congregation in Brooklyn; ten years later visited Italy to improve his health; returned to New York and officiated a short time, and in 1861 again went to Italy, where he died suddenly from apoplexy. In literature he was known as the author of *Lays of Love and*

Faith, Early Lost and Early Saved, The History of a Penitent, a memoir of his mother, Anna Graham, *Lectures on the Heidelberg Catechism*, and as editor of *British Female Poets*. His last public effort in his own country was an eloquent speech made at the great union meeting in New York, April 20, 1861. He was noted as an elegant scholar, a fine conversationalist, and a lover of woodland sports.

BETLIS. See BITLIS, *ante*.

BEULÉ, CHARLES ERNEST, 1826-74; a French archæologist and author, educated in the normal school at Paris, and sent to Athens as one of the professors of the school established there in 1852. He discovered the propylæa of the acropolis, and wrote *L'Acropole d'Athènes*, which was published by the French government. Honors came rapidly, and he was soon a member of all important scientific societies, and of the legion of honor. His later years were devoted to politics. Among his works are *Studies in the Peloponnesus*, *The Moneys of Athens*, *History of Sculpture before Phidias*, and *History of Greek Art*.

BEVERLEY, JOHN OF, a prelate of the 7th and 8th c., born in Northumbria, and tutor of the venerable Bede. He was bishop in Hexham in 685, and archbishop of York in 687. In 717, he resigned and retired to a college which he had previously founded at Beverley, where he died in 721. Among his works are *Exposition of Luke*, *Homilies on the Evangelists*, and a number of epistles.

BEVERLY, a t. in Essex co., Mass., on the Eastern railroad, 18 m. from Boston, connected with the city of Salem by a bridge. It has many fine residences of Boston merchants, which overlook its good harbor. Many of its people are engaged in the business of fishing. Pop. of township, '70, 7230.

BEWLEY, ANTHONY, b. Tennessee, 1804; hanged by a mob in Texas, Sept. 13, 1860. In 1843, he entered the Missouri conference as a Methodist minister, but when the church divided on the slavery question he adhered to neither side, but preached independently, earning his living by manual labor. Other independents supported him, and he became by their consent a presiding elder. When the church in Missouri was reorganized in 1848, he came back to its service. In spite of the universal persecution of "abolition preachers," he kept the tenor of his way, and in 1858 was sent to Texas. He was driven out by violence, but returned to the work in 1860, saying to protesting friends, "Let them hang or burn me if they choose; a hundred will rise out of my ashes." But the opposition was so great that he was again compelled to leave. Then a reward was offered for his head, and he was kidnapped in Missouri, hurried off to Texas, and hanged.

BEXAR', a co. in s.w. Texas; intersected by the Galveston, Harrisburg and San Antonio railroad; 1450 sq.m.; pop. '70, 16,043—2303 colored. Productions, corn, cotton, wool, butter, and cattle. Co. seat, San Antonio.

BEXAR' DISTRICT, or TERRITORY, a region of n.w. Texas between the Rio Pecos, New Mexico, and the Indian territory; pop. '70, 1077, about one person to 40 sq.miles. Most of the n.w. part is a high table-land without wood or water; the n.e. and e. portion is well watered by the streams that run into the Brazos and the Colorado.

BEYLE, MARIE-HENRI, 1783-1842; a French soldier and author, better known as "De Stendhal," the most celebrated of his many *noms de plume*. He was about to enter the polytechnic school, when by chance he was present at the battle of Marengo. Carried away by enthusiasm, he enlisted as quartermaster of dragoons, rose to be lieutenant, and acted as aid-de-camp to gen. Michaud. After the peace of Amiens, he left the army and led a roving life—studying in Paris, becoming a mercantile clerk in Marseilles, running after a beautiful actress, who spoiled his romance by marrying a rich Russian—and returned to war in the commissariat of Napoleon's ill-fated Russian expedition, where he remained loyal to the fallen emperor. After the restoration he resided in Milan until 1821, when he was suspected of being a French spy, and hastily returned to Paris, remaining there nine years, acquiring fame as an accomplished writer and man of the world. In 1830, he was consul at Trieste, and afterwards at Civita Vecchia, finally returning to Paris a year before he died. He wrote lives of Haydn, Mozart and Metastasio; a history of Italian painting; *Rome, Naples, and Florence* in 1817; a life of Rossini; *De l'Amour*; an essay on Racine and Shakespeare; and *Promenades dans Rome*. He was an admirable conversationist, full of anecdote and apt in application.

BEZA'S CODEX, or CAMBRIDGE MANUSCRIPT, an ancient vellum containing the Greek text of the four gospels entire in the order used in the English Bible, the Acts (except a number of omissions), and fragments of the epistles. It is believed to date from the 6th c., and is noted for many interpolations, there being 600 in the Acts alone. It was presented to Cambridge university by Theodore Beza, who obtained it about 1562 from a Huguenot soldier who took it from a monastery in Lyons. It has been printed twice.

BEZETHA, one of the four hills on which Jerusalem is built, n. of Antonia; from which it was separated by a deep ravine. It was not inclosed until Agrippa built the third wall.

BEZIQUE (from Sp. *besico*, "little kiss," in allusion to the meeting of the queen and knave), a game at cards played with a double pack, from which the twos, threes, fours, fives, and sixes have been rejected. The remaining cards rank from ace down, as in whist. The dealer gives three cards to his adversary, three to himself, then two to each, and lastly three to each, and turns a trump. Tricks are taken as in whist except when the cards are equal, such as two tens together, when the leader wins the trick. After each trick the player draws one card from the stock, the winner taking the top card and the loser the next, the trump card or the one exchanged for it being taken up last. The object of the game is to promote in the hand various combinations of cards which, when declared, entitle the holder to certain scores; to win aces and tens; and to win the so-called last trick. A declaration must be made as soon as the trick is taken and before drawing from the pack, and this is done by placing the declared cards (one of which must not have been declared before) face upward on the table; but they still form part of the hand and can be led or played just as though they had not been declared. (The rules are too long to be inserted here.) There are also three or four bezique, when three or four packs are used. The game is usually 1000 points, and the scores vary from 10, for the seven of trumps played or exchanged, to 500 for double bezique. If clubs or hearts are trumps, the bezique cards are queen of spades and knave of diamonds, and *vice versa* when spades or diamonds are trumps. The deal goes from one to another alternately until the game is finished.

BHATNI R, or **BHATTIS**, a people of northern Hindustan, in the British district of Hissar. There are two races, one of Mohammedans of Rajput descent, who are the influential class; the other the common people, known as Jâts, who adhere to the religion of their immediate superiors, and are by them treated with moderation. A portion till the soil, but most of them are shepherds. While under native rulers they appear to have been a horde of freebooters, savage and even ferocious in disposition. Their rajah could raise 20,000 or 30,000 men for war, but they had nothing like discipline. Their former capital (of the same name) was taken in 1398 by Timur, at a later period by George Thomas, an English military adventurer, and in 1805 by the rajah of Bikánir, who still retains authority over it. The principal town is Sirsá, between which and Bháwalapur a route for commerce has been opened.

BHIL, a native tribe in central India, friendly to the English, which has done good service in suppressing the predatory habits of its neighbors. In common with other hill-tribes, the B. are supposed to have been aborigines in their region. They are of dark complexion and diminutive stature, but active and capable of enduring much fatigue. It is with much difficulty that they are reconciled to the life of agriculturists.

BIAF'RA, a kingdom in w. Africa on a bay of the same name between 0° and 5° n., extending but a short distance from the ocean. The chief town is B., situated near the coast.

BIÁS, one of the five streams of the Punjáb, India, rising in the Bhotang pass, 13,000 ft. above sea-level. It traverses the Kubu valley for 75 m., thence w. and s. to the Punjáb plains, and joins the Sutlej after a course of 350 miles. The B. ran in another bed about a century ago, and emptied into the Multán. The natives say its course was changed in 1750.

BIBB, a co. in Alabama, on the Big and Little Cahawbas, reached by the Alabama and Chattanooga railroad; 520 sq.m.; pop. '70, 7469—2408 colored. It is hilly and fertile. Iron and coal are abundant. Co. seat, Centreville.

BIBB, a co. in Georgia, on the Ocmulgee; traversed by the Central Georgia railroad; 250 sq.m.; pop. '70, 21,225—11,424 colored; in '80, 27,036. It is uneven, and not very fertile; productions, corn, cotton, and sweet potatoes. Co. seat, Macon.

BIBBIE'NA, **FERDINANDO GALLI DA**, 1657—1743; an Italian painter and architect who first put movable scenery on the stage. He was employed by Charles VI. to conduct triumphal processions, then much in vogue in Europe. He wrote on architecture and the theory of perspective.

BIBER, **GEORGE EVERARD**, D.D., b. 1801; an English author and clergyman, concerned with Pestalozzi's schools at Yverdun, and author of a biography of that eminent teacher. He became a British subject in 1839, and is a curate. He has been active in church affairs; was for some years editor of *John Bull*, and has published *The Standard of Catholicity*, *Sermons*, *Bishop Bloomfield and His Times*, *The Value of the Established Church of the Nation*, and *Robbing Churches is Robbing God*.

BIBES'CO, **GEORGE DEMETRIUS**, Prince, b. 1804; a statesman of Wallachia who in 1842 aided in the overthrow of Ghika, and succeeded him as ruler, but was driven out by the revolutionary movements of 1848. In 1862, he was elected to the Roumanian parliament, but declined to serve.

BIBLE, **CURIOUS EDITIONS OF**. Besides those issues of the book which have historical importance are those notable for curious errors, or for incidents of publication. The following is a list of the more familiar of these, with their peculiar designations:

THE GUTENBERG BIBLE.—The earliest book known, printed from movable metal types, is the Latin Bible issued by Gutenberg, at Mentz, A.D. 1450.

THE BUG BIBLE.—So called from its rendering of Psalms, xci.: 5: "Afraid of bugs by night." Our present version reads, "terror by night." A.D. 1551.

THE BREECHES BIBLE.—The Geneva version is sometimes called the Breeches Bible, from its rendering of Genesis, iii.: 7: "Making themselves breeches out of fig-leaves." This translation of the Scriptures—the result of the labors of the English exiles at Geneva—was the English Family Bible during the reign of queen Elizabeth and till supplanted by the present authorized version of king James I.

THE PLACE-MAKERS' BIBLE.—From a remarkable typographical error which occurs in Matthew, v.: 9: "Blessed are the place-makers," instead of peace-makers. A.D. 1562.

THE TREACLE BIBLE.—From its rendering of Jeremiah, viii.: 22: "Is there no treacle [instead of balm] in Gilead?" A.D. 1568.

THE ROSIN BIBLE.—From the same text, but translated "Rosin" in the Douai version. A.D. 1609.

THE HE AND SHE BIBLES.—From the respective renderings of Ruth, iii.: 15—one reading that "She went into the city." The other has it that "He went." A.D. 1611.

THE WICKED BIBLE.—From the fact that the negative has been left out of the seventh commandment (Exodus, xx.: 14), for which the printer was fined £300. A.D. 1631.

THE THUMB BIBLE.—One inch square and half an inch thick, was published at Aberdeen. A.D. 1670.

THE VINEGAR BIBLE.—So named from the head line of the 20th chapter of Luke, which reads as "The parable of the vinegar," instead of the vineyard. A.D. 1717.

THE PRINTERS' BIBLE.—We are told by Cotton Mather that in a Bible printed prior to 1702, a blundering typographer made king David exclaim that "Printers [instead of princes] persecuted him without a cause." See Psalms, cxix.: 161.

THE MURDERERS' BIBLE.—So called from an error in the 16th verse of the Epistle of Jude, the word "murderers" being used instead of "murmurers." A.D. 1801.

THE CANTON MEMORIAL BIBLE.—Wholly printed and bound in 12 hours, but only 100 copies struck off. A.D. 1877.

BIBLE, REVISED ENGLISH VERSION. A revision of the English Bible, or "authorized version," has been in progress for about ten years and is now nearly completed. A deep and general interest is felt in the reasons assigned for making this revision, in the nature of the alterations proposed, and in the character and qualifications of the men selected for the work.

1. *The reasons assigned for a revision.*

1. The division into chapters and verses needs to be revised. The division into chapters was made by cardinal Hugo de Sancto Caro, about the middle of the 13th century. The verses of the old testament are of earlier date and Jewish origin. Those of the new testament were made by Robert Stephens, for his edition of the Greek testament published in 1551. The division into chapters was introduced into the earlier English versions; the verses appeared first in the Geneva bible of 1560. As these divisions were hastily made and with a view to convenient reference rather than to an accurate exhibition of the subject matter, it is not surprising that some passages are severed which ought to be connected, and that others are connected which ought to be separate. For example: in Gen. i., the six days of the creative week are cut off from the seventh day; Is. liii. ought to begin with the last three verses of lii.; and Rev. xxii. should yield its first 5 verses to xxi.

2. There are obsolete words which might, with advantage, be exchanged for words in current use. The authorized version has contributed greatly to the permanence of the English language. Yet some words have slipped out of use, notwithstanding its hold upon them. Among these are "wist" not, for *knew* not, or *did not consider*; "eschew," for *shun*; "leasing," for *falsehood*; "broided," for *braided*; "neesing," for *sneezing*. Some words that are retained in use have changed their meaning since the translation was made. "By and by" then meant, *immediately*, now it means *after a while*; to "prevent," was to *go before*, now to *restrain*; to "let," was to *hinder*, now to *permit*.

3. Sometimes proper names have been translated as common nouns; in other instances the reverse has been done. "From the tower of Syene unto the border of Ethiopia," should be—from Migdol unto Syene, the border of Ethiopia; "the house of God," should sometimes be translated, Bethel; "populous No," should be, No-Ammon; "a hollow place that was in the jaw," should be—the hollow place that is in Lehi. On the other hand, "the children of Sheth," should be—tumultuous children; "men of Belial"—worthless, wicked men; the "Gammadims" in the towers of Tyre—warriors; "Pannag," not a country, but an article of commerce.

4. Often the disregard of the definite article, both in Hebrew and Greek, has made the translation inaccurate or vague. "There is a feast of the Lord in Shiloh" should be—the feast of the Lord is in Shiloh. David's wondering exclamation in acknowledgment of the promise that in the distant future the incarnate Messiah should be his son, instead of being, vaguely, "Thou hast regarded me according to the estate of a man of high degree," should be—according to the estate of THE MAN, THE EXALTED ONE. In the new testament, "a city which hath foundations," should be—the city which hath the foundations; and, "a good fight" which Paul had fought was—the good fight of faith.

5. In many passages the distinction between tenses of Hebrew and Greek verbs has been neglected or incorrectly rendered. In the old testament the imperfections from this source are most numerous in the poetical and prophetic books. The future is there often translated as the past. "I cried," instead of—I will cry; "the Lord sustained," instead of—will sustain; "God came," instead of—will come; "and made intercession for the transgressors," instead of—and will make. Often the future is rendered as the imperative, so that a confident declaration seems a command or a prayer. Thou wilt not withhold Thy tender mercy, is changed into, "withhold not Thou." Often the prophets seem to be declaring the past when they are foretelling the future. In the new testament similar inaccuracies in translating tenses are found. The continued action expressed by the imperfect, is sometimes disregarded. We find, "their nets brake," instead of—were breaking; "they brought to Him a man sick of the palsy," instead of—were bringing. The completed past of the perfect tense is sometimes translated as a present; "I am crucified with Christ," instead of—I have been; and at other times, by the indefinite past, "anything made that was made," for—has been made; "was counted worthy," for—has been. The indefinite past tense also is translated as a perfect or a present; "death passed upon all men for that all have sinned," instead of—for that all sinned; "we that are dead to sin," instead of—we that died to sin.

6. One and the same original word is often translated by various English words, both in different places and in the same context. On the other hand one and the same English word is sometimes used to express different words in the original. The Divine being who made a covenant with Abraham is called, "the Angel Jehovah;" but when Malachi calls the Lord—the Angel of the Covenant, the translation more vaguely says, "the Messenger of the Covenant." "Blameless" and "guiltless" are used in translation of the same word; so are "everlasting" and "eternal;" "wonder," "admiration," and "marvel;" "goodly" and "gay;" "lust," "coveting," and "concupiscence;" "love" and "charity;" "hope" and "trust;" "happy" and "blessed;" "atonement" and "reconciliation;" "mad" and "beside thyself." We find one Greek word which is expressed by seven English words—"straightway," "immediately," "forthwith," "anon," "as soon as," "by and by," and "shortly." On the other hand one word in the translation sometimes represents very different words in the original. The majestic Nile is pre-eminently "the river of Egypt;" yet the translation gives the same epithet to a comparatively insignificant brook. The opprobrious name "fools" is fastened alike on the atheistic and the inconsiderate; "hell," is used both for the state of the dead and for the place of the wicked in misery; "devil" is the name given both to Satan and to the demons subject to him; the verb "to be" is made to express both the birth of a creature and the eternal existence of the Son of God.

7. The italic words call for revision. The authorized version is remarkable for the abundant use of italic letters, not to mark emphasis, as in other books, but to distinguish words not expressed in the original, yet, as the translators thought, implied in it and rendered necessary by difference of idiom between the ancient languages and our own. They are to be valued as a proof of the honesty and care with which the translation was made. In many instances they are also useful in making the meaning clear. Yet a thorough revision of them is, in the opinion of well qualified judges, greatly to be desired. Many of them are superfluous, since they are fairly implied in the original. Among these are parts of the constantly recurring verb "to be;" and personal, possessive, and relative pronouns, which are plainly implied in the original and necessary to the sense. In Jn. xx. 5, "stooping down and looking in," the italics are not required, since the original verb includes both acts in its signification; and in 1 Pet. i. 12, as applied to angels, it is translated "to look into," without any attempt to express the stooping down. "Some say that thou art John the Baptist, might better be only—some say, John the Baptist; and "by the space of 40 years," is simply—40 years. On the other hand, some italic words have nothing, expressed or implied, in the original to warrant them. "There is no speech nor language where their voice is not heard," should be only—there is no speech nor language; their voice is not heard. In Jn. viii. 6, "as though he heard them not," is an addition without warrant, undertaking to declare the object of Jesus in writing on the ground when the text gives no intimation of it.

In Matt. xxv. 14, the italics say, "*the kingdom of Heaven is* as a man;" and in Mk. xiii. 34, "*the Son of man is*;" but in both cases it is THE TIME spoken of in the preceding verse that is the object of comparison.

8. Revision is called for by the knowledge concerning the original texts which has been attained since the authorized version was made. The Hebrew text then in use possessed the great advantage of being accepted by Christians and Jews alike. It had been edited by Jewish scholars and watched over from generation to generation with reverent and even superstitious care. New copies were always minutely compared with the old. All errors and variations in words, letters and accents were noted in the margins of the manuscript, but the text itself was never changed. These marginal notes are continued in the printed Hebrew bibles and often manifestly contain the true reading. But sometimes our translators followed the text and translated the marginal reading only in their margin. And, as the great majority of English bibles do not give the marginal readings, a large proportion of persons have no means of knowing the correction. In Is. ix. 3, an apparent contradiction results from this cause, making the

passage unintelligible; "Thou hast multiplied the nation and NOT increased the joy; they joy before Thee ACCORDING TO THE JOY OF HARVEST" (that is—with a joy increased to the utmost). While the word translated "not" is in the Hebrew text, it is corrected in the margin by another (slightly different in form but having the same pronunciation) meaning *his* or *their*; and the translation should be—and increase THEIR joy. Thus the sentence becomes harmonious and clear. The Greek text of the new testament which the translators used had been printed from a small number of comparatively modern manuscripts imperfectly collated. Since then a much larger number have been discovered; some of which are of great antiquity and value. The collation of both Hebrew and Greek manuscripts, which has been prosecuted so assiduously since 1611, has produced many corrections, to the accuracy of which the best critics are agreed. They are indeed of various degrees of importance; none of them affect vitally the integrity of the Scriptures; many are very slight; yet not a few increase, decidedly, the clearness and force of the record; and on the whole they are considered to furnish a valid reason for a thorough revision.

9. Besides the erroneous or defective translations which have arisen from the sources already pointed out, others exist for which various causes might be assigned. The whole of Is. ix. 1, in connection with the preceding context needs revision, in order to dispel its darkness. We specify, now, only the latter part: "when at the first he lightly afflicted the land of Zebulon and the land of Naphtali and afterward did more grievously afflict her by the way of the sea, beyond Jordan, in Galilee of the nations:" this should be—as the former time degraded the land of Zebulon and the land of Naphtali, so the latter time shall glorify the way of the sea beyond Jordan, Galilee of the nations. "Woe to him who ladeth himself with thick clay," should be—who ladeth himself with goods taken in pledge. "To hunt souls to make them fly"—to hunt them as birds. "All that make sluices and ponds for fish"—all that work for wages are sorrowful in heart. The place in Jerusalem where Huldah dwelt was not "the college," but the second division of the city. "The land that thou abhorrest shall be forsaken of both her kings," should be—the land of whose two kings thou art afraid, shall be forsaken. It is not said in Job concerning the war-horse, "neither believeth he that it is the sound of the trumpet;" but—"he will not stand still when the sound of the trumpet is heard." The translation of Matthew's narrative concerning the receivers of what it calls "tribute money" who came to Peter, fails to show that it was not the political tribute to Rome which Jesus was asked to pay; thus the force of his claim to be rightfully exempt does not appear; also, "a piece of money," might be either too little or too much for Peter and himself. But in the Greek these points are definite and clear. The money demanded was the half shekel which the Mosaic law required every Jew to pay for the support of God's house; from this the Son of God, according to the analogies of earthly kings, was certainly free; and the specific coin which Peter was to find, was the exact amount for two. At the close of Heb. iii., there are three questions asked and answered, all closely related to one another and to the argument. But the first of them, the authorized revision changes to a positive, yet indefinite assertion, to the injury of the sense: "for some, when they had heard, did provoke; howbeit not all that came out of Egypt by Moses;" which should read interrogatively—for who were they who when they heard, provoked? Were not all of them those who came out of Egypt by Moses?

II. *The nature of the alterations proposed.* While the facts thus indicated may be accepted as supplying reasons for a thorough revision of the English Bible and as indicating the nature of the results expected, they also show that only a *revision* is required of the translation which, having been so long in use, is so diligently studied, ardently loved, and widely diffused. A new *translation* is not needed, is not desired, and, if made, could never take the place of the old. The revised Bible will read like the old; the hallowed associations which throng around it will not be dispelled; and when the work is complete its greatest value will appear, not in the changes made, the obscurities removed, the errors corrected, and the improvements introduced; but in the confidence inspired by the fact that, thoroughly tested, line by line, and word by word during more than ten years by chosen companies of men most profound and exact in scholarship, the English Bible, needing no essential change, is confessed to be the most adequate and accurate translation that can now be made; and that the vast proportion of its renderings are without a flaw.

III. *Principles adopted for the work of revision.* 1. To make as few alterations as possible, consistently with faithfulness. 2. To limit, as far as possible, the expression of such alterations to the language of the authorized or earlier versions, preserving the former style. 3. Each company to go twice over the portion to be revised; once provisionally; the second time, finally. 4. To adopt the Hebrew or Greek text for which the evidence decidedly preponderates; and when this differs from that from which the authorized version was made, to indicate the difference in the margin. 5. On the first revision to decide by simple majorities; but on the final revision by each company to retain no change in the text not approved by two thirds of those present. 6. When a proposed alteration has given rise to discussion, to defer voting thereon till the next meeting whenever one third of those present so desire; such intended vote to be announced in the notice for the next meeting. 7. To revise the headings of chapters and pages, the paragraphs, italics, and punctuation. 8. That each company shall refer,

when considered desirable, to divines, scholars, and literary men, whether at home or abroad, for their opinions.

IV. *The names and stations of the Committees of Revision.* This revision had its origin in the convocation of Canterbury, May 6, 1870, by the appointment of a committee of eminent biblical scholars and dignitaries of the church of England with power to revise, for public use, the English version of 1611; and to associate with them representative biblical scholars of other Christian denominations using that version. In accordance with the authority given them, that committee invited the appointment of a similar American committee, to be associated with them, virtually in one organization, with the same principles and objects and to be in constant correspondence with them, that both together may issue one and the same revision for all English-speaking people.

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E. A. Washburn, D.D., Calvary church, New York.

New testament company, 13. *In both companies*, 27. *Total, British and American*, 79.

BIBLE SOCIETY, AMERICAN. The first portion of Scripture printed in America was the New Testament, translated into the Indian language by John Eliot, and printed at Cambridge, Mass., in 1661; a translation of the whole Bible followed in 1663. A German Bible was printed at Germantown, Penn., in 1743. In 1777, the English New Testament, and in 1782 the entire Bible, was printed at Philadelphia. This was the first English Bible with an American imprint, and it was recommended by Congress, after an examination by the chaplains. The first Bible society in the United States was instituted at Philadelphia in 1808; the second, at Hartford; the third, at Boston; the fourth, at Princeton, N. J.; all in 1809. A few years later, about 60 local societies existed. Delegates from 35 of these met in New York, May, 1816, and organized the American Bible society, to which the local organizations became auxiliary. The number of auxiliaries increased rapidly, and at present amounts to 7000, including branches. In 1841, an act of incorporation for the American B. S. was obtained, with privileges which have since been enlarged. The first place of business was a room 7 ft. by 9; the next was 20 ft. sq.; the third was in a building erected in Nassau street, on a lot 50 ft. by 100; and afterwards enlarged. In 1852, the present Bible house was built, occupying the whole of the ground bounded by Third and Fourth avenues, Astor place and Ninth street, having a periphery of more than 700 ft., an open square in the center, and being 6 stories high. The structure is of brick with stone copings, and commands attention by its magnitude, admirable proportions, and appropriate finish. The working force consists of the executive and manufacturing departments; the former containing the corresponding secretaries, treasurer, and general agent; the latter includes printing, electrotyping, proof-reading, and other branches of the work. The number of persons employed is about 350. The printing is now executed on 23 large steam-power presses, and 3 of smaller size. In the bindery, also, the best modern improvements have been introduced. The society owns 120 sets of stereotype and electrotype plates, from which are printed 22 sizes of English Bibles, and 16 sizes of the New Testament; each size is bound in from 4 to 6 styles, as there is a demand for Bibles of all sizes in fine bindings; but by far the greater proportion of all issued are in plain styles, and are circulated among the poor. The whole Bible has been stereotyped, at great expense, in the Boston raised letter for the use of the blind. It is issued in 8 or in 16 volumes, any of which may be obtained separately. About 12,000 volumes have been circulated, in great part gratuitously.

The aim of the American B. S., and its auxiliaries, is to distribute Bibles as widely as possible among the destitute of all classes and religious denominations, either

selling them at cost, or for a portion of it, or giving them away to the very poor. In 1829, an exploration of the states and territories was made, with a view to a general supply of the destitute. Every accessible family in the more settled portions of the country was visited. In 1856, a second general effort resulted in the supply of about 500,000 destitute families. In 1866, a third supply of the whole country was commenced, and has been vigorously carried forward.

The foreign work of the American Bible Society was done at first chiefly through missionary societies, by the contribution of funds to aid them in printing the Bible. In this way the countries are reached in which the American churches had established missions. The Scriptures are now published at the Bible house in French, Spanish, Portuguese, Welsh, German, Danish, Swedish, Arabic, Armenian, and Hawaiian. The New Testament, also, in Italian, Slavonic, Bulgarian, Syriac, Cherokee, Choctaw, Dakota, and Ojibwa. Smaller portions are printed in many additional languages. Editions have been prepared for the society at Paris, Bremen, Stockholm, St. Petersburg, Constantinople, Beirut, Lucknow, Lodianna, Bangkok, Foochow, Peking, Shanghai, Yokohama, and Honolulu.

RECEIPTS AND ISSUES OF THE AMERICAN BIBLE SOCIETY.

Decades.	Receipts.	Vols. Issued.
1816-26.....	\$450,000	440,000
1826-33.....	955,000	1,550,000
1836-46.....	1,233,000	2,510,000
1846-56.....	3,042,000	6,772,000
1856-66.....	4,755,000	10,513,000
1866-76.....	6,794,000	11,340,000

BIBLE SOCIETY, AMERICAN AND FOREIGN, an organization formed by Baptists, who desired that translations of the Bible in foreign lands should conform as nearly as possible to the original Hebrew and Greek. In this they had mainly in view the rendering of βαπτίζω by *immerse* instead of *baptize*. In the circulation of the English Scriptures, they were willing that, for a time, the authorized version should be used. In 1859, a portion of the denomination, dissatisfied with this course, formed THE AMERICAN BIBLE UNION, whose object, as set forth in its constitution, is "to procure and circulate the most faithful versions in all languages throughout the world." It has done much in foreign lands; and, with the assistance of scholars both in Europe and America, is engaged in revising the authorized version.

BICKERSTETH, EDWARD HENRY, b. England, 1825; son of Edward; educated at Cambridge; curate in 1848 in Birmingham, and since then in several places; rector, and latterly private chaplain to the bishop of Ripon. Among his works are *The Rock of Ages, or Scripture Testimony to the One Eternal Godhead of the Father, of the Son, and of the Holy Spirit*, *The Blessed Dearl*, *The Risen Saints*, *Hades and Heaven*, *The Spirit Life*, *The Shadowed Home and the Light Beyond*, and several long and short poems. He is best known in this country by his long poem *Yesterday, To-day, and Forever*, which has won great admiration, with some adverse criticisms.

BICYCLE (*ante*), a machine for human locomotion, consisting of two wheels connected by a single bar; the forward wheel having a diameter of 50 to 60 in., the rear wheel, directly behind the other, being about one third as high. At first these machines were made with wheels of the same size, or nearly so; but no satisfactory speed was obtained until Parisian builders hit upon the device of a small hind wheel. That which was little better than a child's velocipede was by this improvement raised to the respectability of an important means of locomotion, and the speed already attained is wonderful. On fairly level roads that are in good repair, an expert rider can outdo a fast horse within an hour or so. In England some remarkable performances are recorded. A hundred miles a day for several successive days have been traversed; the space between Tunbridge and Liverpool, 234 m., in 18 h. 35 min.; the journey from London to John o' Groat's, more than 800 m., over hilly and often bad roads, in 14 days. The bicycle for fast travel has a large forward or driving wheel, which the rider can fit his legs to. The larger the wheel, the greater the speed to be obtained. The rider's feet, that give the motive power, rest on stout cranks placed at right angles, so that in working the machine his legs nearly imitate the act of rapid walking or running. He is seated on a little saddle just behind the large wheel, and guides his course by a bar with double handles. By this crank he swerves the forward wheel at will, and the expert can make sharp curves, and perform many surprising feats of gyration. The first thing to be learned is balancing, and that is best achieved by trying short trips down a slight incline. When balancing is accomplished and steering mastered, practice will soon make a rapid rider. In the bicycle for service there is or should be a rest for the feet, since in going down hill there is little work for the cranks or treadies. The B. is not only a pleasant and cheap means of travel, but it adds the zest of good exercise, and is therefore growing in favor in this country. A good bicycle ought to have india-rubber tires, to prevent jolting, to be made of the strongest material, and to weigh only about 50 lbs. For speed, the forward wheel, made as large as the rider can manage, is usually from 48

to 60 in. in height. Of this machine there are two general styles: the "racer," built very light for speed, and the "roadster," heavier for steady service.

BIDA, a large inland t. in Africa, $9^{\circ} 5' \text{ n.}$, $6^{\circ} 5' \text{ e.}$, 16 m. n. of the Niger; the capital of the kingdom of Nufe.

BID'DEFORD, a city in Maine on the Saco, 9 m. from its mouth, and 15 m. s.w. of Portland, on the Boston and Maine, and the Portsmouth, Saco, and Maine railroads; pop. '70, 10,282. B. was settled in 1616-17, by Richard Vines, when York county comprised the whole province of Maine. The main business is manufacturing, and the exportation of a superior quality of granite.

BIDDLE, CLEMENT, 1740-1814; b. Philadelphia; a Quaker, but a soldier, who raised a corps for the protection of friendly Indians against the outlaws known as "Paxter boys." In the beginning of the revolution he was an officer in the Quaker volunteers, and was made deputy quartermaster-general. He took part in the fight at Trenton, where he secured the resigned swords of the Hessian officers. He was also at Princeton, Brandywine, and Germantown, and rendered valuable service in the terrible winter of 1777-78 at Valley Forge. In 1794, he went against the whisky insurrection. Washington thought highly of B., and made him U. S. marshal for Pennsylvania.

BIDDLE, CLEMENT CORNELL, son of Clement, 1784-1855. He was in the navy when young, but left it for the law. In the second war with England he was capt. of dragoons and col. of volunteers. He is best known by his notes and additions to the translations of Say's *Treatise on Political Economy*. He was prominent in the national free-trade convention of 1831.

BIDDLE, JAMES, b. Philadelphia, 1783-1848; an American naval capt.: served as midshipman in the war with Tripoli, where he was made prisoner and kept until the peace. He was lieut. on the *Wasp*, which captured the British *Frolic* early in the war of 1812, and was put in command of the prize, but both were captured by the *Poictiers* and taken to Bermuda. Exchanged in 1813, he served on the *Hornet*, in command of which he sailed for the East Indies, captured the *Penguin*, and was wounded in action. Congress gave him a gold medal and the rank of captain. In later years he was a commissioner to make a treaty with Turkey.

BIDDLE, NICHOLAS, b. Philadelphia, 1750; killed by an explosion at sea, 1778. When but 15 years of age he was left on an uninhabited island of the West Indies, where he remained two months. In 1770, he entered the English navy, and served as a seaman on Nelson's vessel in capt. Phipps's exploring expedition. In the revolution he joined the Americans and commanded a small brig in the attack on New Providence; in 1776, captured two British transports with valuable cargoes and a battalion of Highlanders; as commander of the *Randolph* he took four prizes, and received command of a fleet to cruise in the West Indies, where he was wounded in an engagement with the *Yarmouth*. While he was in the hands of the surgeon the magazine blew up, and of 315 men all but four were killed.

BIDDLE, RICHARD, 1796-1847; brother of the president of the U. S. bank, a lawyer and leader of the Pittsburgh bar. He published a *Review of Capt. Basil Hall's Travels in North America*, and a *Memoir of Sebastian Cabot, with a Review of the History of Maritime Discovery*. In 1837-40, he was a member of congress.

BIEFVE, EDOUARD DE, b. 1808; a Belgian painter who studied with David d'Angers. He excels in portraits and historical compositions. By order of the government he produced the "Compromise of the Brussels Nobles of Feb. 16, 1566," which was greatly praised at the Paris exhibition of 1855. Some of his other works are "The Introduction of Rubens to Charles V.," "Massaniello," "Ugolino," "Raphael and La Fornarina," and "The Knights of the Teutonic Order recognizing the Elector of Brandenburg as their Grand Commander," done for the king of Prussia.

BIEL, GABRIEL, b. about the middle of the 15th century. He was pastor at Mainz, and on the establishment of the university of Tübingen, in 1477, was appointed professor of theology, and twice afterwards rector. He was a follower of William of Occam. His work *Collectorium Super Libros Sententiarum G. Occami*, is a clear account of the nominalistic doctrine, and presents a complete system of scholastic thought regarded from that point of view. B. has been erroneously called "Ultimus Scholasticorum" (the last of the scholastics). He died in 1495.

BIELA, WILHELM VON, 1782-1853; a German astronomer and soldier, and major in the Austrian army; celebrated as the discoverer of a comet named after him, and for contributions to Schumacher's *New Astronomy*.

BIELA'S COMET, one of the comets of short period, named from its investigator, Wilhelm von Biela. Its periodic time is 3617 years. Its orbit was first determined on its appearance in 1823, and it was found to have been seen in 1772 and 1805. On its return in 1846 it was in two parts, separated by about 157,000 m., unequal in size, each having a distinct nucleus and tail. At the return in 1852, the parts were 1,250,000 m. asunder. Since then it has not been seen. It has been suggested that its orbit has crossed that of a meteoric shower, and that it has been broken up and dispersed as material for shooting stars.

BIELAU, a t. in Prussia, called **LANGEN BIELAU**, being the longest village (4 m.) in the state. It is important for cotton and other manufactures, and boasts of one old castle. Pop. '71, 13,070.

BIENHOA, a t. in Cochín China, capital of a province, 20 m. n.w. of Saigon, connected with that city by a canal. B. was taken by the French in 1861, and is now one of their fortified posts. Pop. of the "inspection" of B., 19,260.

BIENVILLE, a parish in n.w. Louisiana; 1050 sq.m.; pop. '70, 10,636—5047 colored. It produces corn, cotton, and sweet potatoes. Co. seat, Sparta.

BIENVILLE, JEAN BAPTISTE LEMOINE, Sieur de; 1680—1768; one of the four brothers who were conspicuous in the exploration and settlement of the French province of Louisiana. The others were Iberville, Sauvolle, and Chateaugay, all sons of Charles Lemoine. With Iberville and Sauvolle, B. went from France in 1698, and made the first settlement at Biloxi. Leaving Sauvolle in command, B. went to explore the country, and in 1700 built a fort 54 m. from the mouth of the Mississippi. The next year he succeeded Sauvolle as governor or director of the colony, fixing the seat of government at Mobile. Chateaugay joined him in 1704 with 17 settlers from Canada, and 20 women arrived from France to be married to the colonists. B. was dismissed in 1707, but his successor died at sea and left him still in authority. With a view to improve the cultivation of the soil he proposed to the French government the exchange of Indians for negro slaves, giving three of the former for two of the latter. About this time the colonists were sorely pressed by famine, and in 1712 the king granted the monopoly of trade to Anthony Crozat, with liberty to import negroes from Africa. In 1713, Cadillac was made governor, and B. kept as lieutenant-governor. They quarreled, and Cadillac sent B. against the warlike Natchez tribe, expecting that he would be killed; but he made friends with the Indians, who built a fort for him. In 1718, B. was made governor, and with the aid of men sent out by Law's, "Mississippi company" founded the city of New Orleans, which became the seat of government in 1723. Recalled the next year, he went to France to answer certain charges, leaving the colony a code regulating slavery, prohibiting all religions except the Roman Catholic, and banishing Jews. In 1726, he was removed, but re-appointed in 1733, and made lieutenant-gen. In 1743, he was finally superseded, and he passed the remainder of his life in France.

BIERSTADT, ALBERT, b. Germany, 1829; in 1831, his family came to America and settled in New Bedford. Having a taste for drawing, he went to Dusseldorf to study, and made sketching tours in Switzerland and Germany. In 1858, he accompanied the Lander expedition to lay out a wagon road from Missouri to the Pacific, and on that and subsequent visits accumulated material for the landscapes on which his artistic fame securely rests. Some of his more notable works are "The Rocky Mountains," "The Domes of the Yosemite," "Storm in the Rocky Mountains," "Emigrants Crossing the Plains," and "Sunlight and Shadow." His recent work has been mainly in the same style, along the Pacific coast. In 1871, he was elected a member of the St. Petersburg academy.

BIF-RÖST, or **BIF-RAUST** (the "tremulous bridge"), the rainbow, which in Norse mythology was deemed to be a bridge between heaven (asgard) and the earth, or some say hell (hela). In the latter time the warriors of Muspelheim (land of fire) ride over the bridge to give battle to Odin and his associate gods; the bridge breaks down; the wolf Fenrir, the Midgard serpent, Loki, and all the followers of Hel, and the frost giants unite in the war. There is nothing in heaven or earth that shall be exempt from fear in that terrible hour. All the gods led by Odin come forth to war. The evil powers triumph, and the whole universe will be consumed with fire.

BIG BETHEL, in the peninsula between York and James river, Va., where, June 10, 1861, an irregular and undecisive battle took place between the union forces and the confederates. After a series of blunders and skirmishes, in which maj. Theodore Winthrop was killed while leading an assault, a retreat was ordered by the union gen. in command. The union loss was about 100, that on the confederate side but seven or eight.

BIG BLACK RIVER, in Mississippi, is about 200 m. long, running through a fine cotton region near the middle of the state, and joining the Mississippi at Grand gulf.

BIG BONE LICK, a salt spring in Boone co., Ky., where many bones of the mastodon and other extinct mammalia have been found.

BIGELOW, ERASTUS BRIGHAM, LL.D., 1814—79; b. Mass.; inventor of looms for weaving suspender webbing, piping cord, knotted counterpanes, carpets, coach laces, etc. He founded the manufacturing village of Clinton, Mass., the head-quarters of the Bigelow carpet company. B. proposed, in 1862, a plan for uniform taxation throughout the United States, and wrote an essay on the tariff considered in regard to the policy of England and the interests of the United States. He was one of the original incorporators of the Massachusetts institute of technology, a trustee of the museum of fine arts, a member of the American academy of arts and sciences, of the Massachusetts historical society, of the London society for the encouragement of arts, manufactures, and commerce; and received the degree of A.M. from several New England colleges.

BIGELOW, JACOB, b. Mass., 1787; physician and botanist; graduated at Harvard in 1806. In early life he became proficient in botany, and published two works on the science. He was for more than 40 years physician to the Massachusetts general hospital, and for a long time professor of materia medica and clinical medicine in Harvard. In 1820, he was one of the committee of five who formed the *American Pharmacopœia*, and assisted in establishing the nomenclature which substituted a single for a double word when possible. B. was the originator of Mount Auburn cemetery, the first of the large and beautiful places of interment now so numerous in this country. Besides many books and papers on botany and medical subjects, he has published poems, etc., and a volume of verse, entitled *Eolopoesis*, is ascribed to him. For many years he was president of the Massachusetts medical society. Of late, since abandoning active practice, he has devoted much attention to technical education and the substitution of practically utilitarian branches for classical study.

BIGELOW, JOHN, b. New York, 1817; graduated at Union college in 1835, admitted to the bar in 1839, and soon after became a casual journalist and editor. In 1850, he joined William Cullen Bryant in the New York *Evening Post*, and was one of its principal editors until 1861, when he was appointed consul at Paris. On the death of Mr. Dayton he became United States minister in France, remaining until 1866. He has published *Life of Fremont*, *Some Recollections of the late Antoine Pierre Berryer*, and *Les Etats-Unis d'Amerique*, the latter in Paris.

BIGELOW, TIMOTHY, 1767-1821; an American lawyer; a graduate of Harvard; for 20 years a member of the Massachusetts legislature, and for more than half that time speaker of the house. He was also a member of the Hartford convention.

BIG HORN, a co. in s.e. Montana, on the Dakota and Wyoming borders; about 30,000 sq. m.; pop. '70, 38 whites. It is intersected by the Yellowstone and some of its tributaries

BIG STONE, a co. in s.w. Minnesota, on the Minnesota river and the Dakota border; 450 sq. m.; pop. 305. Co. seat, Ortonville.

BIHAR, a co. in Hungary, e. of the Theiss; 4280 sq. m.; pop. '70, 557,337, mainly Magyars and Wallachians. The soil is generally fertile, and the people are rich in horses, cattle, and sheep. Gross-Wardien and Debreczin are the largest towns.

BIJAPORE', BIJAPUR, or BIJAIPUR (ante), the ancient capital of an independent sovereignty in India, of the same name, once an extensive and opulent city, but now with mere vestiges of its old grandeur. It is on a fertile plain, 16° 50' n., 75° 48' e., and is still a town of great extent. The citadel, a mile in circuit and very strong, was built in 1849, and its defenses, 6 m. in circumference, were completed in 1566. Outside of the fort are the remains of a large city. The natives say that according to ancient records, B. once contained 1600 mosques and 1,000,000 houses. The outer wall of the city was of stone, about 20 ft. high and prodigiously thick, with ditch and rampart, and towers of stone at intervals of 100 yards. The great mosque, in the fort, was 200 ft. long by 165 wide, with wings 219 by 45 feet. The mosque and mausoleum of king Ibrahim Adil Shah, completed about 1620, was 36 years in building, and is reported to have cost \$8,500,000. It is 115 by 76 ft., covered by an immense dome raised on arches. Among the curiosities of B. is the immense cannon, said to be the largest piece of cast brass ordnance in the world, captured from the king of Ahmadnagar by the king of B. in the 17th century. It is 14 ft. long, 28 in. caliber, and would carry a ball of 1600 pounds. The town is 245 m. s.e. of Bombay.

BILED-UL-JERID. See BELED-EL-JEREED.

BILFINGER, or BÜLFFINGER, GEORG BERNHARD, 1693-1750; son of a Lutheran minister of Würtemberg, and, like several others of his family, born with twelve fingers and twelve toes. B. studied philosophy and theology in Tübingen, where he became preacher to the castle. He gained the prize (1000 crowns) offered by the academy of science of Paris for a solution of the problem of the cause of gravity. Later in life he was a privy counselor in Würtemberg, and greatly advanced the interests of public instruction and agriculture.

BILL, or BROWNBILL, the main offensive weapon of English infantry until the substitution of fire-arms; a two-edged, sickle-shaped knife or sword, weighing from 9 to 12 lbs., on a handle 3 or 4 ft. long, and wielded with both hands. It had terrible power, sometimes taking off a person's head or cutting a man in two in spite of the strongest armor. It was also called a "glave."

BILL, in legislation, the common name for a proposed but not consummated legislative act. In congress and in state legislatures laws usually first appear in the form of bills; they are read once or twice, and referred to the committee having charge of the subject to which they relate; e.g., a bill to amend the tariff would go to the committee on commerce. If the committee report unfavorably, the bill is ordinarily dropped or withdrawn; but if they report without objection, or favorably, it is referred to the committee of the whole for discussion, and reported from that committee to the house. After it has passed both houses, it goes to the committee on engrossed bills, who see that a correct copy is made for the signature of the president or governor, and if signed

(or not returned within a time fixed by law, usually 10 days), the "bill" becomes a "law." If returned without approval, two thirds of all the members elected to each house (the houses voting separately) can enact it over the president's or governor's objections. Bills for raising revenue (in congress) must originate in the lower house, but the senate may propose and make amendments.

BILLINGS, JOSEPH, an English navigator with capt. Cook in his last voyage. In 1785, he went into Russian service, and explored the region around Kolyma river in e. Siberia, near the winter quarters of Nordenskjöld, in 1778-79. In 1789-90, he made several voyages in the Okhotsk sea and the Arctic ocean, exploring the islands near the coast of Alaska. He returned to Kamchatka in 1791.

BILLINGS, JOSIE. See **SHAW, HENRY W.**

BILLINGS, WILLIAM, 1746-1800; an American composer who gave up the trade of a tanner to teach psalm-singing, and published six books of tunes, nearly all of which were of his own composition. So far as known, he was the first American composer of music, and his music, which now seems so quaint, was at one time universally popular.

BILL OF ATTAINDER (*ante*). The constitution of the United States expressly declares (art. i., sec. 9) that "no bill of attainder or *ex-post-facto* law shall be passed."

BILL OF COMPLAINT IN CHANCERY (*ante*), is the same as a declaration in an action at law, a libel in admiralty courts, or (in England) an allegation in a spiritual court. It is a complaint in writing addressed to the chancellor, giving the names of the parties to the suit, a statement of the matters on which the complainant relies, the allegations which he makes, the assertions that the matters complained of are contrary to equity, and a prayer for relief. Ordinarily, such a bill consists of nine parts: 1, the address; 2, the names of the parties; 3, statements of the plaintiff's case; 4, a general charge of confederacy; 5, the allegations of the defendant's pretenses; 6, the clause of the jurisdiction; 7, a prayer that the defendant may answer; 8, a prayer for relief; 9, a prayer for process. In recent practice the "confederacy" and the reference to the defendant's probable answer, and also the jurisdiction clause, are omitted, except where confederacy and fraud are specifically charged.

BILL OF COSTS (*ante*), the statement of items that make up the full amount of costs in a suit. It is assessed by the proper court officer, and the tax may be demanded before the payment of the main bill.

BILL OF CREDIT, a paper issued and circulated as money by a government. Though the federal constitution denies to the states the power to issue such bills of credit, it is indirectly done in banking when the bills of a bank authorized by a state are issued as money.

BILL OF EXCEPTIONS (*ante*), a written statement of objection to a decision of a court on a point of law, made by either party in a case, and certified by the judge making the decision excepted to. The object of a bill of exceptions is to bring the points complained of before the proper court for review and possible reversal of the decision.

BILL OF EXCHANGE (*ante*). In this country an inland bill of exchange is one of which the drawer and drawee live in the same state; if the drawee lives in another state or country, it is called foreign. A bill of exchange is negotiable, and may pass through any number of hands before payment. The transfer may be by indorsement either "in blank" or "in full;" the first method requires only the name of the payee upon the back, in which case the bill passes from hand to hand as payable to bearer; in the second method a person is named to whom payment is to be made, whose indorsement then becomes necessary to a further transfer. When so indorsed as to be made payable to bearer, it becomes, like money, the property of whomsoever receives it in good faith and for a consideration, even from a thief. If the drawee, upon presentation, refuses to pay, the indorser becomes liable to the holder. If the last indorser is compelled to pay in full, he may in turn recover in full from either of the preceding indorsers. The holder, however, is not required to pursue any prescribed order as between the indorsers, but may bring suit against whichever of them he prefers; and the one thus selected has the same right of action against any preceding indorser. Where a bill is made payable by successive indorsements to several payees, they are liable jointly, and only for their respective shares.

In law, every indorsement is held to be a contract, so that, though the original bill should be void, the indorser will yet be responsible. If the payee assents to a conditional acceptance of an unconditional bill, he is bound thereby; but he is not obliged to take such an acceptance. If the drawee refuses to pay, "protest" is usually made, as in case of the non-payment of a promissory note due to a bank. Notice to the drawer and indorsers must be promptly given in this or some other form. Bills of exchange are made payable either "at sight," or in a certain number of days "after sight." The drawee is entitled to "three days' grace" before payment. If the holder, for a consideration, agrees with the drawee to extend the time of payment, the drawer and indorsers are discharged unless they give their assent to such agreement.

BILL OF INDICTMENT, a written accusation, charging a person or persons with crime or misdemeanor, presented by a grand jury, usually through the district attorney. If the jury believe that the person ought to be tried they "find," or return, "a true bill;" if the evidence does not warrant a trial, the return is, "not a true bill," or "not found."

BILL OF LADING (*ante*), formerly a careful contract for the transportation of wares by water, and confined almost entirely to shipping; but latterly applied to any sort of transportation, so that even the slightest memorandum given by a common carrier may be a bill of lading.

BILL OF PARTICULARS, an informal statement of a plaintiff's cause of action or of a defendant's set-off, containing the items of a claim and showing how they arose. A defendant, in giving notice or pleading set-off, must give a bill of particulars, or he will be precluded from giving evidence in support of it at the trial.

BILL OF PRIVILEGE. In England, the form of proceeding against an attorney of the court, who is not subject to arrest.

BILL OF RIGHTS (*ante*). Declarations of personal rights are made in the amendments to the federal constitution, and also, at greater length, in nearly all the state constitutions. The bill of rights is merely a statement of those national and political immunities that all men enjoy and share in common.

BILL, TRUE. See **BILL OF INDICTMENT**.

BILSON, THOMAS, 1526-1616; an English author, bishop of Worcester and Winchester, and a member of the privy council. Among his works are *The True Difference between Christian Subjection and Unchristian Rebellion* (a vindication of queen Elizabeth's course toward the low countries), *The Perpetual Government of Christ's Church*, etc.

BIMINI, an island that never existed, supposed by Ponce de Leon to be among the Bahamas, and to contain the fountain that had power to restore youth and beauty. He found Florida, but neither any such island, nor any remarkable fountain.

BINARY STARS. See **DOUBLE STARS**.

BINGHAM, HIRAM, 1790-1869; b. Vt.; a Congregational minister, graduate of Middlebury college and Andover seminary, and first missionary to the Sandwich islands, where he remained until 1841.

BINGHAM, JOSEPH, 1668-1723; an English clergyman, educated at Oxford; a tutor in the college in 1691, and a rector near Winchester somewhat later. Here he wrote his valuable *Antiquities of the Christian Church*. He was subsequently rector at Havant, near Portsmouth. Like many other simple souls of the period, he lost his little property in the "South sea bubble."

BINGHAMTON, a city in Broome co., N. Y., beautifully situated at the junction of the Chenango and the Susquehanna rivers, at the mouth of the Chenango canal, and on three railroads, the New York and Erie, the Syracuse and Binghamton, and the Albany and Susquehanna; pop. '75, 15,518. It is in a fine agricultural region, a few miles n. of the Pennsylvania line, and has a large local and canal and railroad trade. The rivers furnish abundant water-power, and there are a number of large manufacturing establishments. The most important public institution is the New York state asylum for inebriates, which has been in successful operation for several years. Other institutions are the Dean college, the Binghamton academy, a Roman Catholic academy, a high-school, and a dozen or more churches. Three day and five weekly newspapers are issued here. B. was one of the earliest settlements in that section of the state. It is 214 m. n.w. of New York, and 142 m. s.w. of Albany, by rail.

BINNEY, AMOS, 1803-47; b. Boston; educated at Brown University, studied medicine, became a merchant, and afterwards devoted himself to science, being one of the founders and the first president of the Boston society of natural history, and of the American association of naturalists and geologists, over which he presided until his death. As a legislator, he promoted the scientific survey of the state; he wrote many valuable papers in the journal of the natural history society; devoted years to the study of mollusks, and wrote *Terrestrial and Air-breathing Mollusks of the United States and Adjacent Territories of North America*, which was published with fine illustrations after his death.

BINNEY, HORACE, LL.D., 1780-1875; b. Philadelphia; a distinguished lawyer, for many years at the head of the Pennsylvania bar; director in the U. S. Bank, and trustee to wind up its affairs. He was a member of congress in 1833-35, but held no other political office. One of his great cases was the defense of the city of Philadelphia against the suit of certain heirs of Stephen Girard. He wrote *The Leaders of the O'd Bar of Philadelphia*, *The Privilege of the Writ of Habeas Corpus Under the Constitution*, and many valuable unpublished papers.

BINOCULAR MICROSCOPE, a microscope adapted to be used by both eyes at the same time. It has only one set of object glasses, but the pencil of light, after passing these lenses, is divided, and the parts are sent to the eyes separately. The division

is caused by a trapezoidal prism that is pushed laterally into the pencil of light, cutting off one half; the other half goes on directly to one eye. That part of the pencil which is obstructed enters the lower face of the prism normally and is not there changed; it meets the second face internally at such an angle as causes it to be wholly reflected and to pass back through the glass to the third face; here it is again totally reflected, and it passes thence out of the glass normally through the fourth face. The result at all these changes of direction is to give it a path, slightly oblique, to that of the unchanged ray, that will carry it through an oblique tube to the second eye. The rays of light cross in the objective: hence, to obtain a stereoscopic effect—that is, to cause the object to stand forth as a solid, its three dimensions being properly appreciated—the light which comes from the left side of the object must enter the right eye, and *vice versa*. Should the light from the right side enter the right eye, a pseudoscopic effect follows; projections seem hollows, and hollows look like elevations. The binocular microscope has two eye pieces. It is restful to the eyes, and with low powers gives information not to be had otherwise, showing the depth, as well as the length and breadth, of the thing observed. The binocular telescope has two tubes and two sets of lenses throughout. A pair of opera-glasses is a familiar example.

BIOLOGY (*ante*), a title under which are classed the sciences that deal with the phenomena manifested by living matter. It is customary to make a separate group of such phenomena as pertain especially to mental organization, under the titles of "psychology" and "sociology," but no natural line can be assigned as separating the subject-matter under those heads from the more comprehensive term at the head of this article. Psychology is closely connected with physiology; while there are phases of social life exhibited by animals, as well as men, which come within the province of the biologist. The biological sciences, on the other hand, are distinctly separated from those which treat of non-living matter, so far as the properties of living matter distinguish it clearly from all other things, and inasmuch as the present state of knowledge furnishes no link between the living and the non-living.

The distinctive PROPERTIES OF LIVING MATTER are: 1. Its *chemical composition*, consisting always of one or more complex forms of a compound of carbon, hydrogen, oxygen, and nitrogen, the so-called proteine—which has not been found except as a product of living bodies—joined with a large proportion of water, and forming the chief constituent of a substance, which, in its primary state, is called protoplasm. 2. Its *universal disintegration and waste by oxidation*, and its *concomitant reintegration by the intussusception of new matter*. A process of waste following the decomposition of the molecules of the protoplasm, in virtue of which they divide into more highly oxidated products which cease to form any portion of the living body, is a constant phenomenon of life. It is thought that one of these waste products is carbonic acid, and that the others contain the remainder of the carbon, nitrogen, hydrogen, and other elements in the composition of the protoplasm. The new matter, received to make good this constant loss, is either already-formed protoplasmic material, supplied by another living thing, or may be elements of the protoplasm united in simpler combinations which have constantly to be built into protoplasm by the agency of the living matter itself. In either case the addition of molecules to those already existing is by interposition between the existing molecules, and not at the surface of the living mass. If the processes of disintegration and reconstruction which characterize life balance each other, the size of the living mass remains stationary; but if the reconstructive process is more rapid than the disintegrative, the living body is enlarged or grows. However, the increase of size which constitutes growth is the result of molecular intussusception, and differs from growth by accretion (as may be observed in crystals), which is effected solely by the addition externally of new matter; therefore, the term "growth" as applied to stones signifies a process entirely different from "growth" of animals and plants. 3. Its *tendency to undergo cyclical changes*. In nature's ordinary course all living matter proceeds from pre-existing living matter, some portion of the latter being detached and acquiring a separate and independent existence. The latest forms have the family characteristics of parentage or descent, the same power and process of reproducing the same life, or nearly so, ending their life after the manner of the parent, and being resolved into more highly oxidated compounds of their elements. A particular living body constantly changes not only its substance, but also its form and size, the end of which is the decay and death of that particular body, the continuation of its kind being provided for by the detachment of parts, which pass through the same series of forms as the parent. No forms of non-living matter, not derived from a living source, will exhibit these three properties, nor will they approach to the singular phenomena explained under the above 2d and 3d heads. Living matter has some other peculiarities, the principal of which are: the dependence of all its activities upon moisture (and heat within a limited range) and the fact that it usually has a certain structure or organization. As to *moisture*, there is a large proportion of water in all living matter; drying to a certain point arrests vital activity, and the entire absence of water is incompatible with either actual or potential life. Still, many of the simple forms may be dried so as to appear to be non-living matter while they are yet potentially alive, and on receiving proper moisture may return to active existence months or even years after apparent death. *Temperature* in a proper

degree is a necessary condition of life; but more or less heat may destroy life altogether by breaking up the molecular structure on which that life depends. All vital activity, and all the phenomena of nutritive growth, movement, and reproduction are possible only between certain limits of temperature. As the temperature nears these limits the manifestations of life weaken and vanish, though they may recover by a return to normal conditions; but any considerable transcending of the natural limits of temperature must result in death. These limits of temperature are not clearly definable, since they vary widely with varying matter, and with the conditions of moisture that accompany temperature. Satisfactory experiments on these points are possible only among the lowest and simplest forms of life; but it has been shown that organisms in a dry state can bear much greater heat than when moist. The spores of fungi in a dry condition have borne 248° to 257° Fahr., but the same spores when moist were killed at 212° . Dry yeast has borne the surprising temperature of 76° below zero without being killed; and in a moist condition it has been frozen to 23° without killing; but a lower reduction destroyed life. The resistance of living matter to cold depends greatly on the special form of the matter; but it should be added that experiments have not been numerous enough to establish definite limits. There are vegetable growths at great heights in temperate climates, while in the arctic regions they cover wide spaces of snow and ice, where the cold is extreme and continues for months together; while the polar seas, north and south, swarm with *diatomaceæ* and *radiolaria*. It is on the *diatomaceæ* that all surface life in these regions ultimately depends, and their enormous quantity proves that their rate of multiplication is adequate to meet the demands made upon them, and that it is not seriously impeded by the low temperature of the water in which they habitually live, a temperature seldom much above freezing. Turning to the maximum of heat that life can endure, we find an equally wide variation. Colin gives the results of a series of experiments conducted with the view of ascertaining the temperature at which *bacteria* are destroyed when living in a fluid of definite chemical composition. He made a fluid containing one tenth of a gramme of potassium phosphate, one tenth of a gramme of crystallized magnesium sulphate, one tenth of a gramme of tribasic calcium phosphate, and two tenths of a gramme of ammonium tartrate, dissolved in 20 cubic centimetres of distilled water. If to this fluid a small portion of water containing *bacteria* was added, the multiplication of the *bacteria* went on rapidly, whether the vessel was open or closed. Such vessels, hermetically sealed, were immersed in water in various temperatures. In those subjected for an hour to 143° Fahr., the *bacteria* underwent no development, the fluid remaining clear; but at even 122° the fluid became turbid in two or three days in consequence of the multiplication of the *bacteria*. It is generally believed that the simplest forms of vegetable life are killed at 140° ; but *algæ* live in hot springs at even 208° . Late investigations lead to the conclusion that the immediate cause of the arrest, in the first place, of vitality, and, in the second place, of its destruction, is the coagulation of certain substances in the protoplasm, and that the latter contains various coagulable matters which solidify at certain temperatures.

As to *life* and *organization*, a recent writer remarks: It may be safely said of all living things, large enough to enable us to trust the evidence of microscopes, that they are optically heterogeneous, and that their different parts, especially the surface layers as contrasted with exteriors, differ physically and chemically; while in most living things, mere heterogeneity is exchanged for a definite structure, whereby the body is distinguished into visible parts, which possess different powers or functions. Living things which present this visible structure are said to be "organized;" and so widely does organization obtain among living beings, that "organized" and "living" are not unfrequently used as if they were terms of coextensive applicability. This is not exactly accurate, if it thereby be implied that all living things have a visible organization, as there are numerous forms of living matter of which it cannot properly be said that they possess either a definite structure or permanently specialized organs; though doubtless the simplest particle of living matter must possess a highly complex molecular structure far beyond the reach of vision. The broad distinctions which, as a matter of fact, exist between every known form of living substance and every other component of the material world, justify the separation of the biological sciences from all others. But it must not be supposed that the differences between living and non-living matter are such as to justify the assumption that the forces at work in the one are different from those which are to be met with in the other. Considered apart from the phenomena of consciousness, the phenomena of life are all dependent upon the working of the same physical and chemical forces as those which are active in the rest of the world. It may be convenient to use the terms "vitality" and "vital force" to denote the causes of certain great groups of natural operations, as we employ "electricity" and "electrical force" to denote others; but it ceases to be proper to do so if such a name implies the absurd assumption that "electricity" and "vitality" are entities playing the part of efficient causes of electrical or vital phenomena. A mass of living protoplasm is simply a molecular machine of great complexity, the total results of the working of which, of its vital phenomena, depend on the one hand upon its construction, and on the other upon the energy supplied to it; and to speak of "vitality" as anything but the name of a series of operations, is as if one should talk of the "horology" of a clock.—(Huxley.) Other writers, objecting to this use of terms, call attention to the fact that even if the

term "vitality" be thus limited in science to a series of operations, the term "life" is not thereby precluded from a larger application.

Coming to the CLASSIFICATION OF THE PHENOMENA OF LIFE, we find that living matter, or protoplasm, and the products of its metamorphoses, may be regarded under four aspects: 1. It has a certain external and internal form, the latter being usually called "structure." 2. It occupies a certain position in space and time. 3. It is the subject of the operation of certain forces, by virtue of which it undergoes internal changes, modifies external objects, and is modified by them. 4. Its form, place, and powers are the effects of certain causes corresponding to these four aspects. Biology is separated into four chief subdivisions, which are: I. Morphology; II. Distribution; III. Physiology; IV. *Ætiology*.

I. MORPHOLOGY. As far as living beings have form and structure they come within the province of *anatomy* and *histology*, the latter being the name for microscopic analysis of living forms. When the form and structure of a living being are not the same during its whole existence, but undergo changes, such beings have *development*, and the history of development is an account of the anatomy of a living being at successive epochs of its existence, and of the manner in which one anatomical stage passes into another. Finally, the systematic statement and generalization of the facts of morphology, in such a manner as to arrange living beings into groups according to their degrees of likeness, is *taxonomy*. The study of anatomy and development has brought out certain generalizations of wide applicability and importance.

1. Most plants and animals are aggregates of cells. Ordinary dissection by unassisted vision suffices to separate the body of any of the higher animals or plants into fabrics of different sorts, which in the same organism always present the same general arrangement, but in different organisms are combined in differing manner. The discrimination of these comparatively few fabrics, or tissues, of which organisms are composed, was the first step toward that ultimate analysis of visible structure which has become possible only by recent perfection of microscopes and improved methods of preparation. Histology, which embodies the results of such analysis, shows that every tissue of a plant is composed of more or less modified structural elements, each of which is called a cell; and this cell in its simplest condition is only a mass of protoplasm, surrounded by a coat or sac called the cell-wall, which contains cellulose. In various tissues the cells may undergo innumerable changes of form, the protoplasm may change into a nucleus with its nucleolus, a primordial utricle, and a cavity filled with watery fluid, and the cell-wall may be altered in composition or structure, or may coalesce with other cell-walls. But however extensive these changes may be, the fact remains clear that the tissues are made up of morphologically distinct units, which are the cells. Every plant, so far as traceable, may be said to commence existence as a simple cell, identical in its fundamental characteristics with the least modified of those cells of which the whole body is composed. Cell-walls, however, are not always necessary. There are plants which spend a portion of their existence in the condition of a spheroid of protoplasm, with nothing like a wall, while at other times the protoplasmic body becomes inclosed within a cell-wall fabricated by its superficial layer. Therefore, just as the nucleus, the primordial utricle, and the central fluid are no essential constituents of the morphological unit of the plant, but represent results of its metamorphoses, so the cell-wall is equally unessential; and either the term "cell" must acquire a merely technical significance as the equivalent of "morphological unit," or some new term must be invented to describe the latter. Probably it would be least inconvenient to modify the signification of the term "cell."

Analysis of animal tissue has led to similar difficulties in terminology. In the higher animals, however, the modifications which the cells undergo are so extensive that the fact that the tissues are, as in plants, resolvable into an aggregation of morphological units, could never have been established without the aid of the study of development, which proves that the animal, no less than the plant, commences its traceable existence as a simple cell, fundamentally identical with the less modified cells which are found in the tissues of the adult. Though the nucleus is almost constant among animal cells, it is not universally present; and among the lowest forms of animal life the protoplasmic mass which represents the morphological unit may be, as in the lowest plants, devoid of a nucleus. In the animal the cell-wall never has the character of a shut sac containing cellulose; and it is not a little difficult, in many cases, to say how much of the so-called cell-wall of the animal cell answers to the primordial utricle, and how much to the proper "cellulose cell-wall" of the vegetable cell. But it is certain that in the animal, as in the plant, neither cell-wall nor nucleus are essential constituents of the cell, inasmuch as bodies which are unquestionably the equivalents of cells—true morphological units—are mere masses of protoplasm, devoid alike of cell-wall and nucleus.

It results, then, for the whole living world, that the morphological unit—the primary and fundamental form of life—is only an individual mass of protoplasm, in which no further structure is discoverable; that independent living forms may present but little advance on this structure; and that all the higher forms of life are aggregates of such morphological units or cells, variously modified. All that is at present known tends to the conclusion that, in the complex aggregates of such units of which all the

higher animals and plants consist, no cell has risen otherwise than by becoming separated from the protoplasm of a pre-existing cell.

2. In the course of its development, every cell proceeds from a condition in which it closely resembles every other cell, through stages of gradually increasing divergence, until it reaches the condition in which it presents the characteristic features of the elements of a special tissue. The development of the cell is, therefore, a gradual progress from the general to the special condition. The same holds good of the development of the body as a whole. However complicated one of the higher animals or plants may be, it begins its separate existence under the form of a nucleated cell, which by division becomes converted into an aggregate of similar cells; the parts of this aggregate, following different laws of growth and multiplication, give rise to the rudiments of the organs; and the parts of these rudiments again take on those modes of growth and multiplication and metamorphosis which are needful to convert the rudiment into the perfect structure. The development of the organism as a whole repeats the development of the cell. It is progress from a general to a special form, resulting from the gradual differentiation of the originally similar morphological units of which the body is composed. When the steps, of the development of two animals are compared, the number of the steps that are similar to one another will be found proportioned to the closeness of the resemblance of the adult forms; so it follows that the more closely any two animals are allied at full growth of structure, the later are their embryonic conditions distinguishable; a law that is alike in both plants and animals.

3. Development, then, is a process of differentiation by which the primitively similar parts of the living body become more and more unlike one another. This process of differentiation may be effected in several ways. The protoplasm of the germ may *not* undergo division and conversion into a cell aggregate; but in various parts of its outer and inner substance may be metamorphosed directly into those physically and chemically different materials which constitute the body of the adult. This occurs in such animal life as that of *infusoria*, and in such plants as the unicellular *algæ*. But the germ *may* undergo division and be converted into an aggregate of cells, which cells give rise to the tissues by undergoing a metamorphosis of the same kind as that to which the whole body is subjected in the case just mentioned. The body, formed in either of these ways, may, as a whole, undergo metamorphoses by differentiation of its parts, and the differentiation may take place without reference to any axis of symmetry, or it may have reference to such an axis. In the latter case, the parts of the body which become distinguishable may correspond on the two sides of the axis, making bilateral symmetry, or may correspond along several lines parallel with the axis, making radial symmetry. The bilateral or radial symmetry of the body may be further complicated by its segmentation, or separation by divisions, transverse to the axis, into parts, each of which corresponds with its predecessor or successor in the series. In the segmented body the segments may or may not give rise to symmetrically or unsymmetrically disposed processes, which are *appendages*, in the general sense of the word. And the highest degree of complication of structure in both animals and plants is attained by the body when it becomes divided into segments provided with appendages; when the segments not only become very different from one another, but some coalesce and lose their primitive distinctness; and when the appendages and the segments into which they are subdivided similarly become differentiated and coalesce. By such processes the flowers of some plants and the heads and limbs of some animals attain their extraordinary diversity and complication of structure. A flower-bud is a segmented body or axis, with a certain number of whorls of appendages; and the perfect flower is the result of the gradual differentiation and confluence of these primitively similar segments and their appendages. The head of an insect is, in like manner, made of segments, each with its pair of appendages, which, by differentiation and confluence, are converted into feelers and variously modified oral appendages of the adult.

In all animals which consist of cell-aggregates, the cells of which the embryo is at first composed arrange themselves by the splitting, or by a process of invagination, of the blastoderm into two layers, the *epiblast*, and the *hypoblast*, between which a third intermediate layer—the *mesoblast*—appears, and each layer gives rise to a definite group of organs in the adult. In the *vertebrata* the epiblast gives rise to the cerebro-spinal axis, and the epidermis and its derivatives; the hypoblast to the epithelium of the alimentary canal and its derivatives; and the mesoblast to all the intermediate structures. The tendency of late research is to prove that the several layers of the germ evolve analogous organs in invertebrate animals, and to indicate the possibility of tracing the several germ-layers back to the blastomeres of the yolk, from the subdivision of which they all proceed.

It may be conceived that all forms of life should have presented nearly the same differentiation of structure, and should have differed from one another by superficial characteristics, each form passing by insensible gradation into those most like it. In such case, taxonomy (the classification of morphological facts) must have been confined to forming an arrangement representing the serial gradation of these forms in nature. Or it may be conceived that living beings should have differed as widely in structure as they really do, but that the interval between any two extreme forms should have been

filled up by an unbroken series of gradations; in which case classification could effect the formation of series only, the strict definition of groups being as impossible as in the former case. But, in fact, living beings differ widely, not only in structure but in the modes in which the differences are brought about; and the intervals between extreme forms are not filled up in the existing world by complete series of gradations. Hence living beings are, to a great extent, susceptible of classification into groups, the members of each group resembling one another, and differing from all the rest by definite peculiarities. No two living beings are exactly alike, but among endless diversities some constantly resemble one another so closely that it is impossible to draw a line of demarcation between them, while they differ only in such characteristics as are associated with sex. These constitute a morphological species; while different *morphological species* are defined by constant characteristics that are not merely sexual. Generic groups thus constituted may be arranged into families, orders, classes, etc.

II. DISTRIBUTION.—Living beings are different in different zones of the earth and in different heights above the sea, or in different climates; and the same is true of living things in the sea. And places that differ in longitude though not differing in climate, may have different animals and plants. Certain areas are inhabited by animal or vegetable groups that are not found elsewhere. Such areas are denominated *provinces of distribution*. Such areas have no common agreements, either in extent, boundaries, or physical features. Indeed, there are no phenomena in nature more capricious and arbitrary than the distribution of living things. The revelations of geology give us an idea of the distribution of long extinct species of animal and vegetable life, and we find that entirely different life is now found where these creatures once existed; and the further we go back the wider the differences. In any locality the succession of living forms may appear to be interrupted by numerous breaks; but the tendency of palæontological investigation is to show that these breaks are only apparent. It is evident, both with regard to animals and plants, that the changes in the living population of the earth which have taken place during its history, have been effected not by the sudden displacement of one set of living beings by another but by a process of gradual introduction of new species and the extinction of older forms. In all parts of the globe in which fossiliferous rocks have been examined, the successive terms of the series of living forms have succeeded each other in a uniform way.

III. PHYSIOLOGY.—The activities of living matter are called its functions; and those functions, though widely varied, may be arranged in three categories. They are: 1. Functions that affect the material composition of the body and determine its mass, which is the balance of the processes of waste on one hand, and those of assimilation on the other. 2. Functions which subserve the process of reproduction, which is essentially the detachment of a part endowed with the power of developing into an independent whole. 3. Functions in virtue of which one part of the body is able to exert a direct influence on another, and the body, by its parts, or as a whole, becomes a source of molecular motion. These categories are, 1, *sustentative*; 2, *generative*; 3, *correlative* functions. Of the three classes of functions the first two are invariably present in living beings. Some of the lower *fungi* do not possess the power of changing the form, or the correlative functions. In most of the lower plants, however, and in all known animals, the body either constantly or temporarily changes its form, either with or without the application of a special stimulus, and thereby changes the relations of its parts to one another, and of the whole to other bodies. The higher animals produce such changes by means of a special tissue called nerve; motion on a large scale is effected by another tissue, *muscle*; and the organism is brought into relation with surrounding things by another special tissue—that of the *sensory organs*, by means of which the forces exerted by surrounding bodies are transmuted into affections of nerve. In the lowest forms of life the functions that have been enumerated are seen in their simplest forms, and they are exerted indifferently, or nearly so, by all parts of the protoplasmic body; and the same is true of the functions of the body of even the highest organisms, so long as they are in the condition of the nucleated cell which constitutes the starting point of their development. But the first process in that development is the division of the germ into a number of morphological units or blastomeres, which eventually give rise to cells; and as each of these possesses the same physiological functions as the germ itself, it follows that each morphological unit is also a physiological unit, and the multicellular mass is strictly a compound organism made up of a multitude of physiologically independent cells. The physiological activities manifested by the complex whole represent the sum, or rather the resultant, of the separate and independent physiological activities resident in each of the simpler constituents of the whole.

The morphological changes which the cells undergo in the course of further development of the organism do not affect their individuality; and, notwithstanding the modification and confluence of its constituent cells, the adult organism, however complex, is still an aggregate of morphological units. Not less is it an aggregate of physiological units, each of which retains its fundamental independence, though that independence becomes restricted in various ways. Each cell, or that element of a tissue which proceeds from the modification of a cell, must retain its sustentative functions so long as it grows or maintains a condition of equilibrium; but the most completely metamorphosed cells show no trace of the generative function, and many exhibit no correla-

tive functions. On the other hand, those cells of the adult organism which are the unmetamorphosed derivatives of the germ, exhibit all the primary functions, not only nourishing themselves and growing, but multiplying, and frequently showing more or less marked movements.

Organs are parts of the body which perform particular functions. Perhaps it is not strictly right to speak of organs of sustentation or generation, each of these functions being necessarily performed by the morphological unit which is nourished or reproduced. What are called the organs of these functions are the apparatuses by which certain operations subsidiary to sustentation and generation are carried on. Thus in the case of sustentative function, all those organs may be said to contribute to this function which are concerned in bringing nutriment within reach of the ultimate cells, or in removing waste matter from them; while in the case of the generative function, all those organs contribute to the functions which produce the cells from which germs are given off, or help the evacuation, or fertilization, or development of those germs. On the other hand, the correlative functions, so long as they are exerted by a simple undifferentiated morphological unit or cell, are of the simplest character, consisting of those modifications of position which can be effected by mere changes in the form or arrangement of the parts of the protoplasm, or of those prolongations of the protoplasm which are called pseudopodia or cilia. But, in the higher animals and plants, the movements of the organism and of its parts are brought about by the changes of the form of certain tissues, the property of which is to shorten in one direction when exposed to certain stimuli. Such tissues are termed *contractile*, and, in their most fully developed condition, *muscular*. The stimulus by which this contraction is naturally brought about is a molecular change, either in the substance of the contractile tissue itself, or in some other part of the body; in which latter case the motion which is set up in that part of the body must be propagated to the contractile tissue through the intermediate substance of the body. In plants there seems to be no question that parts which retain a hardly modified cellular structure may serve as channels for the transmission of this molecular motion; whether the same is true of animals is not certain. But in all the more complex animals, a peculiar fibrous tissue (nerve) serves as the agent by which contractile tissue is affected by changes occurring elsewhere, and by which contractions thus initiated are co-ordinated and brought into harmonious combination. While the sustentative functions in the higher forms of life are still, as in the lower, fundamentally dependent upon the powers inherent in all the physiological units which make up the body, the correlative functions are, in the former, deputed to two sets of specially modified units, which constitute the muscular and nervous tissues.

When we compare the different forms of life together as physiological machines, we find that they differ as do machines of human construction. In the lower forms, the mechanism, though perfectly adapted to the work to be done, is rough, simple, and weak; while in the higher forms, it is finished, complicated, and powerful. Considered as machines, the difference between a polyp and a horse suggests that between the distaff and the spinning-jenny. In the progress from the lower to the higher organisms there is a gradual differentiation of organs and of functions. Each function is separated into many parts, which are severally intrusted to distinct organs—a sort of equitable division of physiological labor. And precisely the same process is observable in the development of any of the higher organisms; so that, physiologically as well as morphologically, development is a progress from the general to the special.

Conditions of Existence.—Thus far the physiological activities of living matter have been considered in themselves, and without reference to anything that may affect them in the world outside the living body. But living matter acts on, and is powerfully affected by, the bodies which surround it; and the study of the influence of the conditions of existence thus determined constitutes a most important part of physiology. The sustentative functions, for example, can be exerted only under certain conditions of temperature, pressure, and light, in certain media, and with supplies of particular kinds of nutritive matter; the sufficiency of which supplies is again greatly influenced by the competition of other organisms, which, striving to satisfy the same need, give rise to the *passive* “struggle for existence.” The exercise of the correlative functions is influenced by similar conditions, and by direct conflict with other organisms, which constitute the *active* “struggle for existence,” and, finally, the generative functions are subject to extensive modifications, dependent partly upon what are commonly called external conditions, and partly upon wholly unknown agencies. In the lowest forms of life, the only mode of generation at present known is the division of the body into two or more parts, each of which then grows to the size and assumes the form of the parent, and repeats the same process of multiplication. This method of multiplication by *fission* is properly called generation, because the parts which are separated are severally competent to give rise to individual organisms of the same nature as that from which they arose. In many of the lowest organisms the process is modified so far that, instead of the parent dividing into two equal parts, only a small portion of its substance is detached, as a bud, which develops into the likeness of the tree from which it was taken. This is generation by *gemination*. Generation by fission and by gemination are not confined to the simplest forms of life, however. Both modes of multiplication are common not only among plants, but among animals of considerable complexity. The

multiplication of flowering plants by bulbs, that of animals by fission, and that of polyps by budding, are well-known examples of these modes of reproduction. In all the cases the bud or segment consists of a multitude of more or less metamorphosed cells. But, in other instances, a single cell detached from a mass of such undifferentiated cells contained in the parental organism is the foundation of the new organism, and it is hard to say whether such a detached cell may be more fitly called a bud or a segment—whether the process is more akin to fission or to gemination. In all these cases the development of the new being from the detached germ takes place without the influence of other living matter. Common as the process is in plants and in the lower animals, it becomes rare among the higher animals. In these the reproduction of the whole organism from a part, in the way indicated above, ceases. At most we find that the cells at the end of an amputated portion of the organism are capable of reproducing the lost part: and, in the very highest animals, even this power vanishes in the adult; and, in most parts of the body, though the undifferentiated cells are capable of multiplication, their progeny grow, not into whole organisms like that of which they form a part, but into elements of the tissues.

Throughout almost the whole series of living beings, however, we find concurrently with the process of *agamogenesis*, or a sexual generation, another method of generation, in which the development of the germ into an organism resembling the parent depends on an influence exerted by living matter differing from the germ. This is *gamogenesis*, or sexual generation. Looking at the facts broadly, and without reference to exceptions in detail, it may be said that there is an inverse relation between agamogenetic and gamogenetic reproduction. In the lowest organisms the latter has not yet been observed, while in the highest the former is absent. In many of the lower forms of life, agamogenesis is the common and predominant mode of reproduction, while gamogenesis is exceptional; on the contrary, in many of the higher, while gamogenesis is the rule, agamogenesis is an occasional exception. In the simplest condition, that termed *conjugation*, sexual generation consists in the coalescence of two similar masses of protoplasmic matter, derived from different parts of the same organisms of the same species, and the single mass which results from the fusion develops into a new organism. In the majority of cases, however, there is a marked morphological difference between the two factors in the process, and then one is called the male, and the other the female element. The female element is relatively large, and undergoes but little change of form. In all the higher plants and animals, it is a nucleated cell, to which a greater or less amount of nutritive material, constituting the food-yolk, may be added. The male element, on the other hand, is relatively small. It may be conveyed to the female element by an outer growth of the wall of its cell, which is short in many *algæ* and *fungi*, but becomes an immensely elongated tubular filament in the case of the pollen cell or flowering plants. But more commonly the protoplasm of the male cell becomes converted into rods or filaments, which usually are in active vibratory movement, and sometimes are propelled by numerous cilia. Occasionally they are devoid of mobility, as in many *arthropoda* and *nematoiden*. The manner in which the contents of the pollen tube affect the embryo cell in flowering plants is unknown, as no perforations through which the contents of the pollen tube may pass so as actually to mix with the substance of the embryo cell have been discerned; and there is the same difficulty with respect to the conjugative processes of some of the *cryptogamia*. But in the great majority of plants, and in all animals, there can be no doubt that the substance of the male element actually mixes with that of the female, so that in all these cases the sexual process remains one of conjugation; and impregnation is the physical admixture of protoplasmic matter derived from two sources, which may be different parts either of the same organism, or of different organisms.

The effect of impregnation appears in all cases to be that the impregnated protoplasm tends to divide into portions (*blastomeres*), which may remain united as a single cell-aggregate, or some or all of them may become separate organisms. A longer or shorter period of rest, in many cases, intervenes between the act of impregnation and the commencement of the process of division. As a general rule, the female cell which directly receives the influence of the male, is that which undergoes division and eventual development into independent germs; but there are some plants, such as the *florida*, in which this is not the case. In these the protoplasmic body of the trichogyne, which unites with the molecular spermatozooids, does not undergo division itself, but transmits some influence to adjacent cells, in virtue of which they become subdivided into independent germs or spores. There is still much obscurity respecting the reproductive processes of the *infusoria*; but, in the *vorticellida*, it would appear that conjugation merely determines a condition of the whole organism, which gives rise to the division of the cndoblast, or so-called nucleus, by which germs are thrown off; and if this be the case the process would have some analogy to what takes place in the *florida*. On the other hand, the process of conjugation by which two distinct *diporpa* combine into that extraordinary double organism, the *diplozoon paradoxum*, does not directly give rise to germs, but determines the development of the sexual organs in each of the conjugated individuals; and the same process takes place in a large number of the *infusoria*, if what are supposed to be male sexual elements in them are really such. The process of impregna-

tion in the *florida* is remarkably interesting from its bearing upon the changes which fecundation is known to produce upon parts of the parental organism other than the ovum, even in the highest animals and plants.

The nature of the influence exerted by the male upon the female element is unknown. No morphological distinction can be drawn between those cells which are capable of reproducing the whole organism without impregnation, and those which need it, as is obvious from what happens in insects, where eggs which ordinarily require impregnation—exceptionally, as in many moths, or regularly, as in the case of drones among bees—develop without impregnation. In fact, generation may be regarded as a particular case of cell multiplication, and impregnation simply as one of the many conditions which may determine or affect that process. In the lowest organisms, the simple protoplasmic mass divides, and each part retains all the physiological properties of the whole, and consequently constitutes a germ whence the whole body can be reproduced. In more advanced organisms each of the multitude of cells into which the embryo cell is converted at first, probably retains all, or nearly all, the physiological capabilities of the whole, and is capable of serving as a reproductive germ; but as division goes on, and many of the cells which result from division acquire special morphological and physiological properties, it seems not improbable that they, in proportion, lose their more general characteristics. In proportion, for example, as the tendency of a given cell to become a muscle cell or a cartilage cell is more marked and definite, it is readily conceivable that its primitive capacity to reproduce the whole organism should be reduced; though it might not be altogether abolished. If this view is well based, the power of reproducing the whole organism would be limited to those cells which had acquired no special tendencies, and consequently had retained all the powers of the primitive cell in which the organism commenced its existence. The more extensively diffused such cells were, the more generally might multiplication by budding or fission take place; the more localized, the more limited would be the parts of the organism in which such a process would take place, and even where such cells occurred, their development or non-development might be connected with the conditions of nutrition. It depends on the nutriment supplied to the female larva of a bee whether it shall become a neuter or a sexually perfect female; the sexual perfection of a large proportion of the internal parasites is similarly dependent on their food, and perhaps on other conditions, such as the temperature of the medium in which they live. Thus the gradual disappearance of agamogenesis in the higher animals would be related with that increasing specialization of function which is their essential characteristic; and when it quite ceases to occur, it may be supposed that no cells are left which retain unmodified the powers of the primitive embryo cell. The organism is then like a society in which every one is so engrossed by his special business that he has neither time nor inclination to marry. Even the female elements in the highest organisms, little as they differ to all appearance from undifferentiated cells, and though they are directly derived from epithelial cells which have undergone very little modification from the condition of blastomeres, are incapable of full development unless they are subjected to the influence of the male element, which may be compared to a kind of nutriment. But it is a living nutriment, in some respects comparable to that which would be supplied to an animal kept alive by transfusion, and its molecules may transfer to the impregnated embryo cell any special characters of the organism to which it belongs.

The tendency of the germ to reproduce the characteristics of its immediate parents, combined in the case of sexual generation with the tendency to reproduce the characteristic of the male, is the source of the singular phenomena of *hereditary transmission*. No structural modification is so slight, no functional peculiarity is so insignificant, in either parent, that it may not make its appearance in the offspring. But the transmission of parental peculiarities depends greatly upon the manner in which they have been acquired. Such as have arisen naturally, and have been hereditary through many generations, tend to appear in the progeny with great force; while artificial modifications, such, for example, as result from mutilation, are rarely, if ever, transmitted. Circumcision through innumerable ancestral generations does not appear to have reduced that rite to a mere formality, as it should have done if the abbreviated prepuce had become hereditary in the Jewish people; while modern lambs are born with long tails, notwithstanding the long-continued practice of cutting those of every generation short. And it remains to be seen whether the supposed hereditary transmission of the habit of retrieving among dogs is really what at first it seems to be. On the other side, Brown-Sequard's case of the transmission of artificially induced epilepsy in guinea-pigs is undoubtedly very weighty. In many plants and animals which multiply both asexually and sexually, there is no definite relation between the agamogenetic and the gamogenetic phenomena. The organism may multiply asexually before, or after, or concurrent with the act of sexual generation. But in a great many of the lower organisms, whether animal or vegetable, the organism which results from the impregnated germ produces offspring only agamogenetically. This is *alternation of generations*, which is, strictly, an alternation of asexual with sexual generation, in which the products of the one process differ from those of the other. The hydrozoa offer a complete series of gradations between a free self-nourishing organism, through those in which it is free but unable to

feed itself, to those in which the sexual elements are developed in bodies which resemble free zooids, but are never detached, and are mere generative organs of the body on which they are developed.

In the last case, the *individual* is the total product of the development of the impregnated embryo, all the parts of which remain in material continuity with one another. The multiplication of mouths and stomachs in a *cordylophora* no more makes it an aggregation of different individuals than the multiplication of segments and legs in a centipede converts that *arthropod* into a compound animal. The *cordylophora* is a differentiation of a whole into many parts, and the use of any terminology which implies that it results from the coalescence of many parts into a whole is to be deprecated. In *cordylophora*, the generative organs are incapable of maintaining a separate existence; but in nearly all allied *hydrozoa* the unquestionable homologues of these organs become free zooids, in many cases capable of feeding and growing, and developing sexual elements only after they have undergone considerable changes of form. Morphologically, the swarm of *medusæ* thus set free from a hydrozoon are as much organs of the latter as the multitudinous pinnules of a *comatula*, with their genital glands, are organs of the echinoderm. Morphologically, therefore, the equivalent of the individual *comatula* is the hydrozoic stock *plus* all the medusæ which proceeds from it. No doubt it sounds paradoxical to speak of a million of *aphides*, as parts of one morphological individual; but beyond the momentary shock of the paradox, no harm is done.

IV. **ÆTIOLOGY** has for its object the ascertaining of the causes of the facts developed under the preceding heads of morphology, distribution, and physiology, by showing that they constitute particular cases of general physical laws. It is well to say that ætiology is yet in its infancy, and that no extended dissertation touching the origin of the species is here undertaken. We can only indicate the general nature of the problems to be involved, and the course of inquiry that may lead to their solution. The first question is: Have we any knowledge, and, if so, what knowledge, of the origin of living matter? Down almost to our times, the universal assumption was that living beings were produced by generation from previous living beings of the same kind; but about 200 years ago investigators began to suspect that this rule was not universally applicable, but that small and obscure organisms were produced by the fermentation of dead putrefying, certainly non-living matter, by a process which they called *spontanea* or *generatio equivoca*, now known as *abiogenesis*. After the investigations of Redi, Spallanxi, and others, people began to doubt the applicability of the axiom "all life comes from the living" to the more complex organisms which constitute the present fauna and flora. The most ardent supporters of abiogenesis at the present time do not pretend that organisms of higher rank than the lowest *fungi* and *protozoa* are produced otherwise than by generation from pre-existing organisms. It is, however, alleged that *bacteria*, *torule*, and certain *fungi*, and monads are developed under conditions which render it impossible that these organisms should have proceeded directly from living matter. The experimental evidence adduced in favor of this proposition is always of one kind, and the reasoning on which the conclusion that abiogenesis occurs is based may be thus stated: 1. All living matter is killed when heated to certain degrees. 2. The contents of a certain closed vessel have been heated to such degrees. 3. Therefore, all living matter which may have been therein has been killed. *But*, living *bacteria* have appeared in such contents subsequently to their being heated; *therefore*, they have been formed abiogenetically—that is, a living being has come from non-living matter. This is perfect logic; but then its validity depends upon the absolute accuracy of the first and second propositions. Suppose we have a fluid full of active *bacteria*; what evidence have we that they are killed by the heat? Only one kind of evidence can be conclusive, and that is that the fluid has been carefully protected from outward contact, and that *bacteria* have never appeared since the heating. The other testimony, for example that which may be furnished by the cessation of motion in the *bacteria*, and such changes as microscopes allow us to observe, is merely presumptive evidence of death, but no more conclusive of death than are insensibility and paleness in a man who has swooned. But though some living beings are killed with moderate heat, and some bear a very high degree without dying, there is no ground for the assumption that *all* living matter is killed at some given temperature. There is, further, good reason for believing that the influence of temperature on life is greatly modified; first, by the nature of the medium in which the organisms to be tested are placed, and, secondly, by the length of time during which they are subjected to trial. The latest experiments leave the question as far as ever from settlement; hence it is reasoned that no experimental evidence that a liquor may be heated to certain degrees and yet subsequently give rise to living organisms, is of the least value as proof that abiogenesis has taken place; and this for two reasons: 1. There is no proof that organisms of the kind in question are dead, except their incapacity to grow and reproduce their kind. 2. Since we know that conditions may largely modify the power of resistance of such organisms to heat, it is far more probable that such conditions existed in the experiment in question than that the organisms were generated anew out of dead matter. Prof. Huxley considers not only that the kind of evidence adduced in favor of abiogenesis is logically insufficient to furnish proof of its occurrence, but also that it may be stated as a well-based induction that the more careful the investigator, and the more complete his mastery over the endless practical difficulties which

surround experimentations on this subject, the more certain are his experiments to give a negative result, while the positive results are no less sure to crown the efforts of the clumsy and the careless.

A belief in abiogenesis, it is argued, is a necessary corollary from the doctrine of *evolution*. This, says Huxley, may be true of the occurrence of abiogenesis at some time; but if the present day, or any recorded epoch of geological time, be a question, the exact contrary holds good. If all living beings have been evolved from pre-existing forms of life, it is enough that a single particle of living protoplasm should once have appeared on the globe, as the result of whatever agency. In the eyes of a consistent evolutionist any further independent formation of protoplasm would be sheer waste. The production of living matter since the time of its first appearance, only by way of biogenesis, implies that the specific forms of the lower kinds of life have undergone but little change in the course of geological time, and this is said to be inconsistent with the doctrine of evolution. But, in the first place, the fact is not inconsistent with the doctrine of evolution properly understood, that doctrine being perfectly consistent with either the progression, the retrogression, or the stationary condition of any particular species for indefinite periods of time; and, secondly, if it were, it would be so much the worse for the doctrine of evolution, inasmuch as it is unquestionably true that certain even highly organized forms of life have persisted without any sensible change for very long periods. The fact is, says Huxley, that at the present moment there is not a shadow of trustworthy direct evidence that abiogenesis does take place within the period during which the existence of life on the globe is recorded. But it need hardly be pointed out that this fact does not in the slightest degree interfere with any conclusion that may be arrived at deductively from other considerations that, at some time or other, abiogenesis must have taken place. If the hypothesis of evolution be true, living matter must have arisen from, or, at least, in place of non-living matter; for by the hypothesis, the condition of the globe was at one time such that living matter could not have existed in it, life being entirely incompatible with the gaseous state. But living matter once originated, there is no necessity for other origination, since the hypothesis postulates the unlimited, though perhaps not illimitable, modifiability of such matter.

Of the causes which have led to the origination of living matter, or the *origin of the species*, it may be said (continues Huxley) that we know absolutely nothing. But, postulating the existence of living matter endowed with that power of hereditary transmission and that tendency to vary which is found in all such matter, Mr. Darwin has declared that the interaction between living matter and surrounding conditions, which results in the survival of the fittest, is sufficient to account for the gradual evolution of plants and animals from their simplest to their most complicated forms, and for the known phenomena of morphology, physiology, and distribution. While much weight is to be conceded to the evidences for the conceivable sufficiency of the above interaction for the alleged results, its actual efficiency in the history of the case must be regarded as at present only a hypothesis.

If all living beings have come into existence by the gradual modification, through a long series of generations, of a primordial living matter, the phenomena of embryonic development ought to be explicable as particular cases of the general law of hereditary transmission. On this view, a tadpole is first a fish and then a tailed amphibian, provided with both gills and lungs, before it becomes a frog, because the frog was the last term in a series of modifications whereby some ancient fish became an urodele amphibian, and the urodele amphibian became an anurous amphibian. In fact, the development of the embryo is a recapitulation of the ancestral history of the species. If this be so, it follows that the development of any organism should furnish the key to its ancestral history; and the attempt to decipher the full pedigree of organisms from so much of the family history as is recorded in their development has given rise to a special branch of biological speculation termed *phylogeny*. In practice, however, the reconstruction of the pedigree of a group from the developmental history of its existing members is fraught with difficulties. It is highly probable that the series of developmental stages of the individual organism never presents more than an abbreviated and condensed summary of ancestral conditions; while this summary is often strangely modified by variation and adaptation to conditions; and it must be confessed that in most cases we can do little better than guess at what is genuine recapitulation of ancestral forms, and what is the effect of comparatively late adaptation. The only perfectly safe foundation for the doctrine of *evolution* (concludes Huxley) lies in the historical or, rather, archæological evidence that particular organisms have arisen by the gradual modification of their predecessors, which is furnished by fossil remains. That evidence is daily increasing in amount and in weight; and it is to be hoped that the comparison of the actual pedigree of these organisms with the phenomena of their development may furnish some criterion by which the validity of phylogenetic conclusions, deduced from the facts of embryology alone, may be satisfactorily tested. According to this statement of the case by Huxley, it would follow that the doctrine of evolution is, for the present, to be held in expectancy; and that it is possible to use concerning it terms of too positive assertion.

BION, a Greek poet, about 280 B.C., who migrated to Italy and died from poison. Some love verses and some fragments of pastorals in hexameters by him are extant.

BIOPASMIC THEORY. See GERM-THEORY OF DISEASE.

BIPONT EDITIONS, copies of the classics issued in Deux-Ponts, or Zweibrücken, in the palatinate of the Rhine, begun in 1779, and finished (in 50 vols.) at Strassburg.

BIRD, FREDERICK MAYER, b. 1838; son of Robert; graduated at the university of Pennsylvania; minister in the Lutheran church, which he left in 1868 to join the Protestant Episcopal, taking charge of a church in New Jersey. He has paid great attention to hymnology, and edited in whole or in part the *Lutheran Hymn Book* and *Hymns of the Spirit*.

BIRD, GOLDING, 1815-54; an English physician proficient in botany; lecturer on natural philosophy and materia medica in Guy's hospital. He was author of *Elements of Natural Philosophy, being an Experimental Introduction to the Physical Sciences, Lectures on Electricity and Galvanism in their Physiological and Therapeutical Relations*, and some other works.

BIRD, ROBERT MONTGOMERY, 1803-54; b. in Delaware; practiced medicine in Philadelphia, and wrote for magazines. He wrote *The Gladiator* for Edwin Forrester, and afterwards wrote several historical romances. In his *Peter Pilgrim*, there is a careful description of the Kentucky mammoth cave. He was also for a time editor of the *North American*.

BIRD'S NEST, EDIBLE, that of a sea-swallow, *hirundo esculenta*, of the Chinese coast and adjacent islands; made of glutinous vegetable matter gathered from coral or other rocks, swallowed by the bird, and thrown up when wanted for use. A nest is a little larger than a common tea-cup, and when new is white and at its best value, growing less valuable as it is used. The nests are in sea-caverns and the most inaccessible places, so that to get at them men are lowered by ropes over fearful precipices. The nest is used for food only by the Chinese, who take the whole supply, perhaps 25 tons annually, at prices ranging from \$5 to \$35 per pound. Its aphrodisiac qualities are the reason of its value with the celestials.

BIRKENFELD, a principality of Oldenburg, adjoining the Rhenish district of Coblenz and Treves; 19½ sq. m.; pop. '71, 36,128. It is a mountainous region covered with forests, and has mines of iron. In 1802, France had possession, Prussia in 1815, and it was ceded in 1817 to Oldenburg. Chief town, Birkenfeld; pop. 2249.

BIRKET-EL-KEROON, a lake in Fayoom, Egypt, 30 m. by 6, communicating with the Nile and the canal said to have been made by Joseph. It was once connected with lake Mœris, with which it was often confounded. The name means "lake of the horn," and alludes to its shape.

BIRMINGHAM, a village in Connecticut, at the junction of the Naugatuck and Housatonic rivers, 11 m. w. of New Haven, on the Naugatuck, and the New Haven and Derby railroads, pop. '70, 2103. The first large manufactory of pins in the United States was begun in New York in 1836, and removed to B. in 1838. There are also rolling-mills, spring and axle factories, and other metal-working industries. B. is connected with Derby by a bridge over the Naugatuck.

BIRNEY, DAVID BELL, 1825-64; b. Alabama; son of James G. He entered the union service during the civil war, and rose to the rank of brig. gen., commanding a division at the battle of Gettysburg.

BIRNEY, JAMES G., 1792-1857; b. Kentucky; graduate of the college of New Jersey; went to Alabama, where he practiced law and became a member of the legislature; removed to Kentucky, and was a professor in Danville university. In 1834, he emancipated his own slaves and advocated universal liberty, shortly afterwards settling in Cincinnati, and starting *The Philanthropist*, one of the earliest journals to advocate the abolition of slavery, for which the printing-office was several times mobbed and partially or wholly destroyed. He was secretary of the American anti-slavery society, and prominent in the organization of the liberty party, which, in 1840, and again in 1844, made him their candidate for president. In the latter year he got 62,500 votes in 13 states, and his candidacy deprived Henry Clay of the electoral votes of both New York and Michigan, thereby electing Polk and securing the annexation of Texas, and a wide extension of the slavery to which B. was himself so ardently opposed. But this extension of slavery opened the way for those demands in its behalf which ended in secession and rebellion, and, through these, in its abolition.

BIRNEY, WILLIAM, son of James G., was a union officer in the civil war, and rose to be brig. gen. of volunteers. **FITZHUUGH**, youngest son of James G., died in the union service with the rank of colonel.

BIRON, ARMAND DE GONTAULT, Duc de, d. July 26, 1592; a French gen. of the 16th c.; grand master of artillery, commanding at the siege of Rochelle and in Guienne. He was among the first to declare for Henry IV. He brought Normandy under subjection, and dissuaded Henry from going to England. B. was killed by a cannon-shot at the siege of Epernay.

BIRON, CHARLES DE GONTAULT, Duc de, 1562-1602; son of Armand; made duke of Biron and admiral of France by Henry IV. He was a man of great intrepidity, but

fickle and treacherous. He was sent to England in 1601 to announce the marriage of Henry with Mary de Medici; but about the same time he was caught in treasonable correspondence with Spain, and was beheaded in the Bastille.

BIRS NIMRUD. See **BABEL, TOWER OF**, *ante*.

BIRSTALL, a parish in Yorkshire, England, s.w. of Leeds; pop. '71, 43,405; with manufactories of silk, cotton, wool, etc., and coal and iron mines.

BIRTH, *ante*, the act or fact of being brought into the world. To fulfill the condition of a living birth the whole body must be brought into the world and detached from the mother, and after such detaching the child must be alive and must have in action the changed and independent system of circulation which follows the severance of the umbilical cord. And yet, the killing of a living child before the separation of the cord is held to be murder, except when necessary for saving the mother's life.

BIRTHS, REGISTRATION OF, and of **MARRIAGES and DEATHS** (*ante*), formerly entirely neglected, but of late years regulated by law in several of the states, especially in Massachusetts, New York, and New Jersey. The record of deaths has been passably well kept in all the country for many years, but not until recently have those of marriages and births been so treated. At present the officiating minister, priest, or magistrate at a wedding, and the physician or midwife at a birth, are required, under penalty for failing to do so, to report to the proper bureau the name, age, sex, nativity, color, and social condition of the persons who marry, and the sex, color, and nativity of parents in case of birth. The U. S. census reported the number of deaths (in the census year) in 1850, and in 1880 the bureau is making a special effort to have the record comprehensive and complete.

BISHAREEN', nomadic tribes living between the Red sea and the Nile; professed Mohammedans but almost uncivilized, without firearms, and accustomed to robbing. They possess camels, goats, horses, and sheep, and are nominally subject to the viceroy of Egypt.

BISHOP (*ante*). In the Protestant Episcopal church in the United States, the functions of bishops, in religious matters, are similar to those of English prelates. In political affairs they have, of course, no official power. They are chosen to office by the convention of clerical and lay delegates in the diocese over which they are to preside; and are consecrated by the house of bishops, according to rules established by the general convention, which consists of the house of bishops and a second house of clerical and lay delegates from all the dioceses. There are 61 diocesan and missionary bishops. In the Methodist Episcopal church, the bishops are elected by the general conference. Their duties are those included in a general superintendence of the whole church. Authority is vested in them all, and its administration is distributed among themselves by mutual agreement. They preside over meetings of the annual conferences, ordain ministers, and appoint them to their fields of labor. The oldest in office is honored as "senior bishop."

In the Roman Catholic church in the United States, bishops are appointed by the pope, as in other countries, and are subject to him.

BISHOP, ANNA, wife of the composer, sir Henry Rowley, B., and herself an eminent operatic and classical singer. Her first appearance was in 1837, and she soon became widely known in Europe and America. In 1858, she married Mr. M. Schultz, of New York.

BISHOP-AUCKLAND, a t. in England, 11 m. s.w. of the city of Durham, on an eminence near the confluence of the Wear and Gaunness; well paved, lighted, and watered. The palace of the bishop of Durham, at the n.e. end of the town, is a spacious and splendid though irregular structure. The site was chosen in the time of Edward I. by bishop Anthony Beck. The present buildings cover five acres, and there is a park attached of 800 acres. The industries of the town are cotton manufactures and engineering. Pop. '71, 8736.

BISKARA, or **BISKRA**, a t. in Algeria, and the most important military post of the Sahara, on the s. side of the Aures mountains. A large caravan trade between the Sahara and the Tell passes through the town. Iron, limestone, and saltpeter are found; dates are abundant; and there are manufactures of carpets. Near by is an acclimatization garden, established by the French. Pop. '72, 7367.

BISSELL, WILLIAM H. 1811-60; a graduate from Jefferson medical college in 1835, who practiced in New York state. In 1837, he went to Illinois, and was in the legislature in 1840; afterwards studied law and became prosecuting attorney. He was a col. in the Mexican war; elected to congress in 1849, and while there had a sharp discussion with Jefferson Davis about the bravery of northern and southern soldiers, which provoked Davis to send him a challenge. B. accepted, chose muskets for the weapons, and prescribed a distance that would in all probability insure death for both. There was no duel, the challenge being withdrawn after some interference of friends. In 1856, he was chosen governor of the state.

BISSEXTILE, the old name of leap year. In the Julian computation a day was added to February every fourth year, but instead of making it as now the 29th, the 24th

day of the month was counted twice (*bis*), and as that day was the sixth (*sexto*) before the calends of Mar. it was called *bis-sextile*.

BITTERFELD, a t. in Saxony, 17 m. n. of Leipsic, at the junction of the Lober and the Mulde; pop. '71, 5043. It has foundries, breweries, and various other manufactories. B. was founded in the 12th c. by the Flemings.

BITTER PRINCIPLES are extracts from various plants by maceration in water or other liquid. Some bitter principles can be crystallized, while the bitter of hops and wild cherry cannot be so treated. Some of the vegetable bitters are soluble in water, and some in alcohol, and their properties are usually neuter, having neither bases nor acids. There is a wide use of bitters as a tonic, but the great portion of those sold are merely a disguise for strong drink, and of no other use to the drinker.

BJÖRNEBORG, or **BIORNBORG**, a t. or city in Finland, on the gulf of Bothnia, 73 m. n. of Abo; pop. 7270; has export trade in tar, pitch, lumber, etc. It was wholly burned in 1801.

BJÖRNSON, **BJÖRNSTJERNE**, b. 1832 in Norway; poet and novelist, first known by articles in a newspaper, *Folkblad*, in which he published sketches and stories. Later he issued *Fædrelandet*, *Thron*, *Arne*, and *Synæte Solbakken*. His stories in English are *Arne*, *Orind*, *The Fisher Maiden*, *The Fishing Girl*, *The Happy Boy*, *The Newly Married Couple*, *Love and Life in Norway*, and others of later date.

BLACAS, **PIERRE LOUIS JEAN CASIMIR**, Duc de, 1771-1839; a member of the cabinet of Louis XVIII., and one of the confidential advisers of the bourbons. As ambassador in Rome he negotiated the concordat of 1817, and was afterwards minister at Naples. At the overthrow of Charles X. he went into exile, offering to the unfortunate king his fortune, which, however, was not accepted.

BLACK, **JEREMIAH S.**, b. Penn., 1810; admitted to the bar in 1830; president of his judicial district in 1842; elected judge of the supreme court of the state in 1851; and was chosen chief-justice. In 1857, president Buchanan made him attorney-general of the United States, and in 1860 secretary of state. He retired from the office when Lincoln's cabinet was appointed, and has since been engaged in his profession and in politics.

BLACKBIRD (*ante*), *Agelaius phoeniceus*, in New England called the "redwing;" of glossy black plumage, except the small wing-covers, in which the first row of feathers is cream-colored and the remainder deep scarlet; about 9 in. long with a spread of wing 14 inches. The female is smaller, with the red and black less distinct. The B. visits all parts of America, arriving in New England usually about the 1st of April. It prefers swamps and low meadows, living upon insects, worms, and young corn; resting in the grass or low bushes, and depositing from three to half a dozen eggs, white with a shade of blue and faint lines of purple. These birds do much damage to corn in the fall, for which reason they are remorselessly hunted. In some of the United States and Canada the name B. is given to the rusty grackle, *scolecophagus ferrugineus*, and in other places to the purple grackle, *quiscalus versicolor*; but these belong to the starling family.

BLACKBIRD, a co. in n.e. Nebraska, on the Missouri river; pop. '70, only 31. The whole co. is occupied by the Omaha (Indian) reservation.

BLACK DUCK, *Anas obscura*, one of the most valuable of game birds, generally abundant over all the United States, and believed to be capable of domestication. Its color is brown-black, with bright tints about the neck and bill.

BLACKFEET, or **SATSIKA**, a tribe of Algonquin Indians originally residing on and near the Saskatchewan, but migrating to Missouri. There are at present three divisions of them scattered over the borders of British America and the United States from Hudson's bay to the Yellowstone region. The B. are warlike, and sun-worshippers; they do not bury their dead, but, in case of a warrior, leave him in his tent in full dress, and sacrifice horses at his door for his use in the happy hunting-grounds. It is supposed that there are about 7000 in the United States and 6000 in Canada.

BLACK FLY, a dipterous insect, the especial torment of man and beast in the arctic and northern temperate latitudes. In the eastern British provinces and Labrador they are more abundant than mosquitoes in the tropics, crawling under the closest garments and into beds, and defying all means of protection. They are very small, mere midges, hardly visible, black, with one white band. In wet weather they are dormant, but in clear sunny days they almost cloud the sun, and can be only partially dispersed by the Indian remedy of a dense smoke. Tar ointment on the exposed skin is said to be the best defense. Their bite is like a sting, but seldom creates swelling, and is not dangerous. Seth Green says that the larva of this fly spins a web under water as perfect as that of a spider. The buffalo gnat of the west is a larger species of this fly, and is said to have destroyed even horses by its bite.

BLACKFORD, a co. in e. central Indiana, on the Salamonie river, traversed by the Fort Wayne, Muncie and Cincinnati railroad, 180 sq.m.; pop. '70, 6272; level and rolling surface and fertile soil; products agricultural. Co. seat, Hartford city.

BLACKFRIARS. See **DOMINICANS**, *ante*.

BLACK FRIDAY, in England, 6th Dec., 1745, the day on which news reached London that the Pretender had arrived at Derby. Again, May 11, 1866, when the failure of Overend, Gurney, etc. (on the previous day) brought on a most disastrous financial panic. In America, Sept. 16, 1875, when the wild speculation in gold, in New York and other cities, culminated in a crash that swept thousands of firms and individuals into financial ruin.

BLACK GUARDS, originally applied to the scullions and lower servants of the English court who were clothed in black garments. Gibbon says, "those who carried coals to the kitchen, rode with the pots and pans, and were in derision called the black guards." The title is recognized in an official proclamation of 1683, which says: "whereas, a sort of vicious, idle, and masterless boyes and rogues, commonly called the black guard, with divers other lewd and loose fellows," etc.

BLACK GUM, the popular name of the *Nyssa multiflora*, the "hornpipe" of New England, and "pepperidge" of the middle states. It grows in thick forests, has crooked branches, and is densely covered with bright green leaves in turfs of four or more at the ends of the branches; bears flowers of greenish hue, becoming blue-black as they ripen; wood close-grained and very tough, but not durable. The timber is used for hubs of wheels and in other places where splitting is to be avoided. It is an ornamental tree in England.

BLACK HAWK, a co. in n.e. Iowa, on Cedar river; reached by the Iowa division of the Illinois Central, and the Burlington, Cedar Rapids, and Northern railroads; 576 sq. m.; pop. '75, 22,913; in '80, 23,921; prairie surface with some forests, producing wheat, corn, oats, butter, etc. Co. seat, Waterloo.

BLACK HAWK, b. about 1768, in a village of Sac Indians on the Mississippi, near Rock river; d. Oct. 3, 1838. In the war of 1812, Black Hawk, then a leading Sac and Fox chief, took the English side. After the war he resisted the encroachments of white settlers, and provoked several petty conflicts, but was subdued and captured in 1832. The tribe was removed, but Black Hawk and his sons and a few warriors were kept a while as hostages, and brought as a show to the eastern cities.

BLACK HILLS, a mountain region in s.w. Dakota and n.e. Wyoming, about 100 by 60 m., rich in mines. In 1876-77 there was trouble with the Indians, whose reservations covering much of the country were invaded by whites in search of gold and silver. Within a few months a number of settlements grew up like Jonah's gourd, and the names of the new towns, Deadwood, Gayville, Central city, Lead city, and others appeared in the newspapers. The mining business continued prosperous, and the product of gold up to the close of 1878 was nearly \$2,300,000. The hills are from 2500 to 3000 ft. above sea-level at their base, and the highest peak is 6700 feet. They are a continuation of the Big Horn spur of the Rocky mountains. (See DAKOTA.)

BLACKMAN, GEORGE CURTIS, a surgeon, b. in Conn.; d. Ohio, 1871; graduate of the New York college of physicians and surgeons. In 1854, he became professor of surgery in the medical college of Ohio (Cincinnati), where he was known as a bold and skillful operator in some very difficult surgical cases. He was medical officer in the civil war, and was present at the battles of Shiloh and the Wilderness. He edited Velpeau's *Surgery*, with notes and additions.

BLACK MONDAY, the Easter Monday in 1351, when hail fell, and many people in England perished from cold. Also the Easter Monday (April 14, 1360) when Edward III. of England was with his army lying before Paris; a day so cold, dark, and stormy that many of his men and horses died from the effects. Shakespeare speaks of B.M. "It was not for nothing that my nose fell a-bleeding on black Monday last" (*Merchant of Venice*). In Australia, Feb. 27, 1865, got this name from a terrible sirocco that made great havoc over a wild region.

BLACK MOUNTAINS, a portion of the Appalachians in North Carolina so called because of their dense evergreen vegetation. Some of the measurements are: Mt. Mitchell or Clingman's peak, 6701 ft. above tide; Guyot's peak, 6661; Sandoz Knob, 6612. Recent measurements show that there are about a dozen peaks in the B.M. that are higher than Mt. Washington (N. H.), whose elevation, 6285 ft., has usually been considered the highest e. of the Mississippi.

BLACK OAK, *Quercus tinctoria*, a species of oak valuable for the tannin furnished by its thick yellow bark, which yields quercitron. Sometimes it is called dyer's or yellow oak.

BLACK RIVER, in n. New York, rising in the western part of the Adirondack region and running w. and n. to lake Ontario. In its course there are numerous falls and rapids furnishing abundant water-power to half a dozen villages, and the city of Watertown. The color of the water is about that of sherry wine. Boats pass from this river to the Erie canal through the Black river canal.

BLACK RIVER, or Big Black, an affluent of White river, in Mo., flowing s. to the Arkansas border; about 350 m. long, and navigable for about 100 m. except in the dry season.

BLACK SILVER, an ore of sulphur, antimony, and silver, found with other silver ores in Saxony, in the Haritz mountains, in Mexico, in the Comstock lode (Nevada), in Idaho, and other places. It is sometimes called Stephanite, and its composition is sulphur, 16.2; antimony, 15.3; silver, 68.5.

BLACKSTONE, a t. in Worcester co., Mass., 33 m. s.w. of Boston; on the Providence and Worcester, and Boston, Hartford and Erie railroads; pop. '70, 5421. The chief business is cotton and woolen manufacturing.

BLACKSTONE, WILLIAM, the first white man who settled on the site of the present city of Boston, about 1623. Ten years afterwards he removed to Rhode Island. It is believed that he was an English clergyman, a graduate of Emmanuel college.

BLACKSTONE RIVER, rises in Worcester co., Mass., and runs into Rhode Island, where its name is changed to the Pawtucket. It furnishes water-power to a continuous line of villages and hamlets along its shores. The B. canal, finished in 1823, is disused, having been supplanted by railroads.

BLACK VOMIT, the dark mucous matter thrown up in yellow fever, and usually a sign of fatal termination of the disease. It is in part coagulated blood blackened by an acid generated in the system. The fever itself is often called the black vomit.

BLACKWELL, ANTOINETTE L. BROWN, b. 1825. She studied theology at Oberlin, and was ordained pastor of a Congregational church in 1853. She retired from this work after a few years, and is a prominent leader in "woman's rights" and other social questions. She married Samuel C. Blackwell in 1856.

BLACKWELL, LUCY STONE, b. Mass., 1818; graduated at Oberlin college. She took an early interest in the anti-slavery cause, and was prominent in the work as a lecturer and agent. In 1855, she was married to Henry B. Blackwell, an English gentleman. Since that time she has resided in Orange, N. J., and is now in Dorchester, Mass. She is known as an ardent advocate of suffrage and other rights for women.

BLACKWELL'S ISLAND, a narrow strip of rocks in the East river, between New York and Long island, about $1\frac{1}{2}$ m. long by $\frac{1}{4}$ m. wide; used exclusively for the penal institutions and hospitals under charge of the city of New York. (See New York City.)

BLADEN, a co. in s.e. North Carolina on Cape Fear and South rivers; traversed by the Carolina Central railroad; 800 sq.m.; pop. '70, 12,831—6103 colored. It is level, with extensive pine-forests; productions, corn, rice, sweet potatoes, etc. Co. seat, Elizabethtown.

BLAEU, WILM., a mathematician, map-drawer, and publisher, was b. at Alkmaar, in Holland, in 1571. He belonged to the school of Tycho Brahé, and secured a considerable reputation by publishing a terrestrial and a celestial globe, excelling in beauty and accuracy everything that had preceded them; and also several maps, which indicated a comparatively precise knowledge of geography. As a printer, he did not attain the elegance and completeness of Elzevir, but nevertheless his chief publications are marked by a fine external finish, and a praiseworthy correctness. He died 21st Oct., 1638, and left two sons, John and Cornelius, who carried on the business together until the death of the latter in 1650.

BLAEU, JOH., the son of the preceding, was b. at Amsterdam about the beginning of the 17th century. He commenced business on his own account at Amsterdam, but afterwards entered into company with his father. His *Atlas Major*, in 11 vols. of the size in which atlases are published at the present day, is a splendid work. It is full of archaeological and geographical information, supplied for each country by men of eminence connected with it. There are many curious plates—among them a representation of Tycho in his observatory—and the maps are extremely valuable from the light they throw on local history. Besides this, he published a series of singularly rich topographical plates and views of towns, which are consulted even to the present day. He died about 1650, leaving three sons, Joh., Wilh., and Peter, the second of whom became a member of the Amsterdam council, while the other two carried on with distinction and success the paternal business. Some of their classical publications, especially Cicero's *Orationes* (1639), are still highly prized.

BLAGOVIESHTCHENSK, a t. in Asiatic Russia, the capital of the province of Amoor, on the A. river and the Dzega; pop. 3167.

BLAINE, EPHRAIM, 1741—1804; commissary general in the revolutionary army under Washington. His exertions during the dreadful winter at Valley Forge went far towards saving the suffering army from starvation.

BLAINE, JAMES GILLESPIE, b. Mass., 1830. His first education was in the common schools, and at the age of 17 he graduated at Washington college in Pennsylvania. Very soon afterwards he removed to Maine, became a writer on the *Kennebec Journal*, one of the leading papers of the state, and within a brief period the editor of the *Portland Advertiser*, one of the oldest and most influential papers in the east. He was an able and accomplished writer, and won an excellent reputation. In the natural course of editorial life he became a politician, and identified himself with the republican party from its commencement. His first political advancement was to the lower house of the

Maine legislature, where he served four years with honor, and increased his rising fame. In his third term he was elected speaker, and so continued for two years. At the outbreak of the war of the rebellion he was among the earliest and most zealous in advocating a vigorous course on the part of the government, and was especially active in raising and organizing troops for the union army. In 1862, he was elected to congress as a republican, and immediately took a place in the front ranks of the party's representatives. His support of the war to preserve the union was no less zealous than that of senator Morton; the preservation of the union was his controlling idea, and he urged it with all his power. He was re-elected in 1864, in 1866, and in 1868. When the struggle was over he was conspicuous in the measures for reconstruction, and he was the author of the proviso that any state in the south should have a full restoration of its original rights and privileges upon the sole condition that it should ratify the amendments to the constitution. During the presidential canvass of 1868, he was among the foremost and most effective of republican advocates, and had the pleasure of carrying his own state by a larger majority than was ever before given for a presidential candidate. In the same year, he was re-chosen to congress by an immense majority. His six years of service in the house of representatives made him the proper successor for speaker, and he was elected. His nomination was made by Elihu B. Washburne, of Illinois, and the vote was—for Elaine, 123; for Kerr (democrat), 57. In 1876, he was elected to the U. S. senate, where he is now one of the most conspicuous members. While this article is in construction Mr. Blaine stands among the foremost of those who are considered probable nominees of the republican party for president of the United States. There are in him certain elements of magnetism that have been unknown since the days of Henry Clay, and no public man has a more ardent and enthusiastic following.

ELAIR, a co. in central Pennsylvania, on the Juniata; intersected by branches of the Pennsylvania railroad; 650 sq.m.; pop. '70, 38,051; in '80, 52,720. The Alleghany and other mountains make the surface very rough, but there are well cultivated valleys, and mines of iron and bituminous coal. Productions chiefly agricultural. Co. seat, Hollidaysburg.

BLAIR, FRANCIS PRESTON, 1791-1875; b. Virginia; educated at Transylvania university, and studied but never practiced law. By opposing the nullification movement in South Carolina, he attracted the notice of president Andrew Jackson, who induced him to assume the editorship of *The Globe*, a democratic journal started at the seat of government. The paper began 1830, and was controlled by Blair till 1845, when he was offered the mission to Spain. This he declined, and returned to his estate in Maryland, soon afterwards leaving the old democratic party and supporting the free-soil movement, which naturally brought him into the republican party.

ELAIR, FRANCIS PRESTON, JR., b. Kentucky, 1821; son of Francis Preston, sr.; graduated at Princeton in 1841, and began the practice of law with his father in St. Louis. He was prominent in the free-soil party that supported Van Buren for president, and was for a time editor of the *Missouri Democrat*. In 1852-54, he was elected to the Missouri legislature; in 1854, elected to congress as a republican; and re-elected in 1860 and 1862. He entered the union army in 1861, rose to brig.gen. in 1863, and resigned his seat in congress. He served through the war, being with Sherman on the "march to the sea." In 1866, he was made collector at St. Louis, and Pacific railroad commissioner. In 1868, he abandoned the republicans and became the democratic candidate for vice-president. In 1870, he was sent to the U. S. senate from Missouri, and at the close of his term of service he returned to private life.

BLAIR, JAMES, D.D., 1656-1743; b. Scotland. He was sent in 1685 by the bishop of London as a missionary to Virginia, and in 1689 was made the highest ecclesiastical officer of the colony. After long efforts, in 1692, he founded William and Mary college, of which he was first president. He was also president of the council of the colony, and rector at Williamsburg. He published many of his sermons and discourses.

BLAIR, MONTGOMERY, b. Kentucky, 1813; son of Francis P., sr.; educated at West Point, and served in the Florida Indian war, but resigned from the army and began the practice of law in St. Louis, where he was U. S. district attorney, and (1843-49) judge of common pleas. He went to Maryland in 1852, and became solicitor in the federal court of claims. In 1857, he was counsel for the plaintiff in the Dred Scott case; the next year president Buchanan removed him from his office of solicitor. In 1861, he was post-master-general in Lincoln's first cabinet; but went out in 1864, and has since adhered to the democratic party.

BLAIR, or PORT BLAIR, the chief British convict settlement in the Andaman islands (Indian ocean), on the s.e. shore of s. Andaman, 11° 42' n. and 93° e.; settled as a convict depot in 1789. It has one of the best harbors in Asia, and from its position in the bay of Bengal, is a most important naval and military station.

BLAIRSVILLE, a t. in Indiana co., Penn., 53 m. e. of Pittsburgh; on the Pennsylvania railroad, and the Pennsylvania canal; pop. '70, 1054. It is an important point for shipping country produce by canal and rail.

BLAKE, GEORGE SMITH, 1803-71; b. Massachusetts; commodore in the U. S. navy. He was a midshipman in 1818; lieut. in 1827; commander in 1847; fleet capt. and com-

mander in the Mediterranean three years; capt. in 1855; superintendent of the naval academy during the civil war; and afterwards commodore and inspector of lighthouses.

BLAKE, JOHN LAURIS, D.D., 1788-1857; b. New Hampshire; graduate of Brown university; licensed by the Rhode Island association as a Congregational minister, but early united with the Episcopal church. He established a seminary for young ladies in Concord, which was removed to Boston in 1822, where he had charge of St. Matthew's church. He edited the *Literary Advertiser* and the *Gospel Advocate*, and published the *Text-Book of Geography and Chronology*, *Biographical Dictionary*, *Family Cyclopædia*, *Letters on Confirmation*, and a number of text-books for schools.

BLAKE, WILLIAM PHIPPS, b. New York, 1826; graduate of the Sheffield scientific school; geologist of the Pacific railroad exploring expedition of 1853, and author of a portion of the reports; edited the *Mining Magazine*; in 1861-63 mining engineer for Japan; in the latter year appointed professor of mineralogy, etc., in the college of California, and geologist to the state board of agriculture. He was commissioner for that state in the Paris exposition; executive commissioner for Connecticut in the centennial exposition, and special agent to Vienna in 1873. He has published *Silver Ores and Silver Mines*, *Report on the Production of Precious Metals*, *Mining Machinery*, etc.

BLAKELY, JOHNSTON, 1781-1814; b. Ireland. He was educated at the university of North Carolina, and went into the American navy in 1800. In 1813, he was commander of the *Wasp*, a new sloop of war. In his first cruise he captured the English sloop *Reindeer*, taking his prize into L'Orient. On another cruise he made several prizes, and captured the *Arvon* and the *Atalanta*. The *Wasp* was spoken Oct. 9, 1814, but was never afterwards heard from.

BLAKEY, ROBERT, b. England, 1795; metaphysician and author. He has published *The Freedom of the Divine and Human Wills*, *History of Moral Science*, *History of the Philosophy of the Mind*, *Historical Sketch of Logic*, *History of Political Literature*, and some works on religious topics, and sporting. In 1835, he was appointed professor of logic and metaphysics in Queen's college, Belfast.

BLANC, AUGUSTE ALEXANDRE PHILIPPE CHARLES, an engraver, b. France, 1815; head of the department of fine arts in the ministry of the interior, 1848-52. In 1845, he began, but has not finished, a *History of French Painters of the Nineteenth Century*. He has written biographies of Dutch and French painters for the *History of Painters of All Schools*. He is also author of *The Complete Works of Rembrandt*, *Grammar of the Arts of Design*, and other works, and is editor of the *Gazette des Beaux Arts*.

BLANCHARD, FRANÇOIS, 1738-1809; a French aeronaut who made many attempts to build a flying-machine. In 1784, he tried a balloon with wings or sails, and a rudder. The next year he crossed the English channel by balloon, and the same year invented the parachute. He came to the United States in 1796, and gave many balloon exhibitions. Two years later, at Rouen, he took up 16 persons with a single balloon, and landed them safely 15 m. away. At the Hague, making his 66th ascent, he was struck with apoplexy, from which he never recovered. His widow made an ascent at Paris in 1819, when her balloon took fire, and she was killed by the fall therefrom.

BLANCHARD, EDWARD LEMAN, b. England, 1820; about 1845 he was editor of *Chambers's London Journal*, and compiler of various guides and hand-books. He wrote a number of stories, essays, farces, burlesques, and dramas; edited Willoughby's *Shakespeare*, wrote the *Man Without a Destiny*, etc., and for nearly 30 years has furnished the Christmas plays for Drury lane theater. He has been more than 15 years one of the editors of the *Daily Telegraph*.

BLANCHARD, THOMAS, 1788-1864; b. Mass.; mechanic and inventor. Among his inventions were a machine for making tacks, one for turning gun-barrels, a lathe for turning gun-stocks and other irregular shapes; a steam wagon, before locomotives were used; contrivances to aid steamboats in ascending rapids, and a machine for bending large timber. He received in all more than 25 patents for important inventions.

BLANCHE OF CASTILE, 1187-1252; daughter of Alphonso IX. and Eleanor of England (daughter of Henry II.); married, according to treaty, to Louis, heir-apparent to the crown of France. After the death of Richard the lion-hearted, the nobles opposed to John offered the English crown to Louis, and his wife urged its acceptance; but the death of John ended the conspiracy. Blanche was the main reliance of Louis when he became king, and after his death she was regent during the minority of her son, Louis IX., during which time she defeated a powerful conspiracy to put a son of Philip Augustus on the throne. She acquired Toulouse by treaty, compelled the submission of the duke of Brittany, and aided the count of Champagne in securing the kingdom of Navarre. She had remarkable executive talent, and personally supervised all government departments, not excepting the army. When her son was 19 years of age, she married him to Marguerite of Provence, who was only 12; and when she yielded up her powers in 1236, France was in a most flourishing condition. She again ruled as regent while Louis was gone, against her strong protest, to the crusade. Louis required great sums of money, and when finally he was a prisoner in Egypt further large sums were demanded for his release. The common people of France rebelled against the neces-

sary taxation, but she put them down with a strong hand; and in spite of all these embarrassments she firmly resisted the encroachments attempted by the church. France has seldom had so able and excellent a ruler, or lost one whose death was more universally lamented.

BLANCO, a co. in central Texas; on Perdinalis river; 727 sq.m.; pop. '70, 1187—44 colored; in '80, 3550; an agricultural region, chiefly prairie. Co. seat, Blanco.

BLAND, a co. in s.w. Virginia; 330 sq.m.; pop. '70, 4000—217 colored. Productions agricultural; co. seat, Mechanicsburg.

BLAND, THEODORIC, 1742—90; an American patriot, descendant of Pocahontas; educated in medicine in Edinburgh; practiced in Virginia, and espoused the cause of the colonies. He was lieut.col. of Virginia cavalry, and served through the war, being an intimate friend and confidant of Washington. He was a member of congress under the federal constitution. He left the "Bland Papers," in which are many valuable facts concerning the struggle for liberty.

BLANDFORD, a t. in Hampden co., Mass.; pop. '70, 1026. It has manufactories and a good public library; its picturesque scenery and elevated situation, about 2000 ft. above the sea, make it a favorite summer resort.

BLARNEY, a village in Ireland, 4 m. from Cork, having a castle built in 1449 by Cormac McCarty. Near the castle are the "groves of Blarney," and on the summit of the castle tower is the stone, the kissing of which is said to endow one with the gift of coaxing, wheedling, and flattering. The true stone is said to be one in a wall where it can be kissed only by a person held over the parapet. The name has given a noun, a verb, and a participle to the English language.

BLASPHEMY (see *ante*). In the United States, besides the common law, there are many statutes defining B.; but they all hold it to consist in words regarding the Deity only. It is defined as "purposely using words concerning God calculated and designed to impair and destroy the reverence, respect, and confidence due him, as the creator, governor, and judge of the world," "a willful and malicious attempt to lessen reverence for God by denying his existence or attributes and to prevent men from having confidence in him." Blasphemy is a misdemeanor at common law, for which special punishments are assigned in various statutes; but a temperate discussion in which the existence of God is denied is not an offense. Gross profanity is blasphemy in a lesser degree, and it is punishable in most of the states, but the law is seldom enforced.

BLASTEMA, the embryo of a seed, or the radicle and the plumule with the parts which connect them. Biologists apply the term to the rudimental mass from which tissue is formed.

BLASTING (*ante*). The processes of blasting are essentially the same here as in Europe; but the developments of mining, railroad building, and improvements in navigation, have rendered necessary some very extensive operations. The most important was, perhaps, the removal of the reefs in the East river, at Hallett's point, near New York, known as the "Hellgate improvement." The rock to be removed extended more than 100 yards into the river, greatly narrowing the channel and rendering navigation extremely difficult. The plan of operation was to sink a large square shaft on the Long Island shore from which the rock projected, and to run into the rock at a proper depth long galleries radiating from the place of entrance like the lines of an expanded fan. The entrance shaft was nearly 100 ft. square, and its bottom was 32 ft. below low water. Nearly 20 tunnels were bored in all directions, extending from 200 to 240 ft., and all were connected by lateral galleries. All the excavated rock was hauled to the entrance and hoisted to the surface. The work was completed in Sept., 1876, and made ready for blasting with more than 52,000 pounds of explosive material in many thousands of holes drilled for the purpose. The explosives were dynamite, rendrock, and vulcan powder. The firing was by electricity. On the given day a quarter of a million people found their way to points on land and water where the explosion could be seen. When the eventful moment arrived, gen. Newton, the engineer in charge, took the hand of his little girl, a mere infant, and with it pressed down the key by which the battery was fired. There was a rumbling or shaking of the ground, the rising of a great mass of water from 20 to 40 ft. in the air, a few small stones thrown a little higher, an immense mass of smoke, and all was over. Millions of tons of rock had been shattered, and yet the noise and the shock were less than would have attended the simultaneous discharge of half a dozen field-pieces in the open air. There was so much doubt and ignorance about the possible effect of this explosion that many people living one, two, and three miles away left their houses and took positions in the open air, through fear of wide-spread ruin. The work was completed successfully, and after dredging out the broken stone the navigation of the channel was greatly improved. In previous years much has been done in the harbor of New York by surface-blasting, i.e., lowering to the face or to some crevice of a rock cans filled with nitro-glycerine and exploding it by electricity, the effect being to gradually wear away the rock. The great work of the Sutro tunnel (q.v.) was another triumph for American engineering.

BLEDSON, a co. in s.e. Tennessee; drained by Sequatchie river; 330 sq.m.; pop. '70, 4870—709 colored. Surface rough; productions agricultural. Co. seat, Pikesville.

BLEDSON, ALBERT TAYLOR, LL.D., b. Ky., 1809; graduate of West Point; served as lieutenant of infantry, but resigned in 1832, becoming professor of mathematics successively in Kenyon college, in Miami university, and in the university of Virginia. During the rebellion he was assistant secretary of war in the southern confederacy. He has published several theological works, has been a frequent contributor to periodical reviews, and is now the editor of the *Southern Review*, a Methodist magazine.

BLEEK, FRIEDRICH, 1793-1859; a celebrated biblical scholar of Germany, educated at the university of Kiel, and in Berlin, under de Wette, Neander, and Schleiermacher. In 1818, he was tutor in theology in the university of Berlin. Soon afterwards he published essays on the *Origin and Composition of the Sibylline Oracles*, and on the *Authorship and Design of the Book of Daniel*, in which he attracted attention by solid learning, thorough investigation, and candor of judgment. After suffering loss of place from some unjust suspicions of a political character, in 1829, B. took the chair of theology in the newly founded university of Bonn, where for 30 years he labored with constantly increasing success, by reason of the thoroughness of his investigations, the impartiality of his judgments, and the clearness of his methods of presentation. In 1843, he was promoted to the office of consistorial counselor, a distinction not since conferred upon any theologian of the Reformed church. He died suddenly of apoplexy, having given his regular lecture on the previous day. His defense of the genuineness of the gospel of St. John is regarded as one of the strongest that has yet appeared, and his critical labors on the New Testament are among the most important contributions to the maintenance of the evangelical faith that the time has produced. His greatest work is the *Commentary on the Epistle to the Hebrews*. Many of his critical works were published after his death.

BLEEK, WILHELM HEINRICH IMMANUEL, 1827-75; son of Friedrich; distinguished for researches in the languages of Africa. He was educated at Bonn and Berlin. In 1855 he went with bishop Colenso to Natal; the next year he settled at Cape Town as interpreter to sir George Gray, and he died there. Among his works are the *Vocabulary of the Zulu Language*, *Handbook of African, Australian, and Polynesian Philology*, *Comparative Grammar of South African Languages*, *Hottentot Tables and Tales*, etc.

BLEMYES, or BLEMYES, an ancient African people, in and around the Libyan desert. In the 21 c., while Egypt was under Roman rule, they made predatory incursions into that province, and Diocletian made important concessions to them. They were powerful and annoying as late as the 7th c., and old authors tell strange stories of their savage appearance and habits. It is supposed that the Ababdeh, the Bishareen, and other tribes are their descendants.

BLEN'NERHASSET, HARMAN, 1734-1831; b. England. He was bred to the law in Ireland, but sold his estates in Ireland for more than \$100,000 and came to the United States. He remained in New York a short time, and finally settled on an island in the Ohio river, just below Parkersburg, Va., where he built a delightful residence, and dispensed the most elegant hospitality. Here Aaron Burr interested him in his scheme for seizing Mexico, where, in case of success, Burr was to be emperor, and B. a duke and ambassador to England. B. expended large sums in fitting out an expedition, and, though discouraged when he learned Burr's real design, the intriguer had such influence with his wife that B. still adhered to him. He was arrested and held for trial, but Burr's acquittal set all the suspected persons free. His beautiful island and home had been sacrificed by creditors, and he returned to Natchez a bankrupt. He undertook a cotton plantation, but the war with England ruined commerce, and he then removed to Montreal, where he practised law. In 1822, he went to Ireland to secure certain property, but failed, and continued to fail in every project. In his last years he was supported by a sister who left a small estate to his wife and children. B. married a daughter of Gov. Agnew of the Isle of Man. She was a woman of superior culture, and authoress of several poems, among them *The Deserted Isle*, and *The Widow and the Rock*. She came to the United States after her husband's death, and petitioned congress for a grant in reparation of her great losses, but she died before final action was taken, and was buried by the sisters of charity in New York. A son, Joseph Lewis, was a lawyer in Missouri. The *Blennerhassett Papers*, with a memoir, were published in 1864.

BLIND, KARL, b. 1820; a German politician, arrested for political offenses while a student at Heidelberg, imprisoned, and subsequently banished for participation in the affair of 1843. He was also expelled from Alsace for complicity in the Paris insurrection. In Sept. after the conflict at Staufeu, he was taken prisoner (with Struve) and sentenced to eight years' imprisonment. Eight months afterwards he was set free by a mob and went to Carlsruhe, thence to Paris, and thence to Brussels, being everywhere repelled, until, in 1852, he found rest in London. There for several years he kept up his violent political agitations, but after 1856 he became more quiet, a consequence, perhaps, of the death of a step-son in the Berlin affray of that year. He has published a great number of political essays, and brief articles on history, mythology, and German literature. In 1875, in the streets of London, an attempt was made upon his life by a political enemy. Among later works of his are *Bre-burial among our Germanic Forefathers; a*

Record of the Poetry and History of Teutonic Cremation, Yggdrasil, or the Teutonic Tree of Existence, and biographies of Freiligrath, Ledru Rollin, and Francis Deak.

BLIND FISH. See AMBLYOPSIS.

BLOCK, MORITZ, b. 1816; a German political economist, naturalized in France. After service in the statistical work of the ministry of agriculture, commerce, and public works, he devoted himself to authorship and published works on agriculture in various countries of Europe, on French statistics and finances, on socialism in Germany, and began and continued for some years the *Annuaire de l'Administration Française*.

BLOCK BOOKS. See PRINTING, *ante*.

BLOCK ISLAND, in the Atlantic, s. of Rhode Island, and n.e. of Long Island; about 8 m. long and 5 wide, constituting the town of New Shoreham, Newport co., R. I.; pop. '70, 1113. It attracts numerous summer visitors. There is a light-house on the n.w. extremity in 41° 13' n. and 71° 34' west.

BLODGET, LORIN, b. N. Y., 1823; student in physical sciences, and in 1851 an assistant in the Smithsonian institution, having charge of matters relating to climate and atmosphere. He shared in organizing the Pacific railroad surveys, and compiled in a volume the records of scientific observations at government military posts. In 1857, he issued *Climatology of the United States. and of the Temperate Latitudes of the North American Continent*, a work highly praised by Humboldt. In 1863, he had charge of the statistical work of the treasury department, and has since been connected with the customs as appraiser at large.

BLODGET, SAMUEL, 1720-1807, an inventor, b. Mass. Under the colonial government he was judge of common pleas in New Hampshire. In 1783 he made machinery by which he saved a valuable cargo from a sunken vessel. His success prompted him to go to England, where he proposed to raise the *Royal George*, the British man-of-war that suddenly careened and sank off Spithead Aug. 29, 1782, Admiral Kempenfeldt and 600 other persons being lost. His proposition was not entertained, and he returned and began the manufacture of duck. In 1793, he began a canal around Amoskeag falls, but failed, and was imprisoned for debt. He believed that by strict temperance and care about exposure to the atmosphere any one might live 100 years; but he died at 87.

BLOEMFONTEIN, a t. in s. Africa, the capital of Orange Free State, 600 m. n.e. of cape Natal; pop. 1200; inhabited chiefly by Boers. There is considerable trade with Cape Colony and the Transvaal republic.

BLOND, JACQUES CHRISTOPHE LE, 1670-1741; a painter of Amsterdam, noted for miniature portraits. He conceived the idea of printing engravings in colors, and spent the most of his life in unsuccessful experiments, working in London and Paris, and dying in a hospital in the latter city. Notwithstanding this ill-success, B. is regarded as the inventor of color-printing.

BLOOD-MONEY, the compensation by a man-slayer to the next of kin of the man slain, securing the offender and his relatives against subsequent retaliation. It was common in Scandinavian and Teutonic countries until after the introduction of Christianity, and the amounts were fixed by law. It is still a custom among the Arabs. There it costs only one third as much to kill a woman as to kill a man; but if a woman slain be quick with a male child, the fine is that for a full man; if with a female child, it is the price of two women. The amount of blood-money ranges from \$150 to ten times that amount. The term blood-money was given in English law to rewards earned by informers against notorious offenders; and it is still used there and in America for compensation obtained by criminals who betray their fellows in crime, or more generally for the reward gained by any act of treachery.

BLOOD RAIN. Showers of reddish and grayish dust sometimes fall on vessels off the coast of Africa, and on the land in the s. of Europe; if accompanied with moisture, they form "blood rain," and in elevated regions, red snow. The dust consists chiefly of microscopic organisms, while the red color comes from oxide of iron. A shower which fell at Lyons, Oct. 17, 1846, was estimated to bring 720,000 lbs. of matter, of which one eighth was organic. A shower described by Darwin covered more than 1,000,000 sq. miles. A shower in Italy, in 1803, furnished 49 species of organisms; one in 1813, in Calabria, 64 species, of which 23 were common to the preceding. These phenomena date back even to the time of Homer. The organic particles are mostly diatoms and rhizopods; the whole number of species determined is more than 300, of which 15 are South American, and none African.

The zone of the earth in which these showers occur extends on both sides of the Mediterranean westwardly over the Atlantic, and eastwardly to central Asia. The origin of the dust is not yet ascertained; there is little ground for thinking it extra-terrestrial, especially as the region affected is so limited.

BLOOD STAINS, as determined by modern science, have risen to importance in some criminal trials, where attempts have been made with some success to determine, by microscopic and chemical tests, whether the stains in question were made by the blood

of a human being or of some other animal; and even the further question is proposed—was the stain made by the blood of a man, woman, or child? and if by that of a man, can we tell if it was the blood of one or of another man? With proper chemical solvents it seems easy to determine that a stain is or is not made from blood. If of blood, then the microscope indicates, by the measurements of the corpuscles of which the blood was composed, whether it was human blood. It is asserted as the result of careful examinations that the blood of a man has larger red corpuscles than that of any other animal. The mean diameter of these red corpuscles expressed in ten thousandths of an inch is thus stated: Man, 77; dog, 70; rabbit, 65; rat, 64; pig, 62; mouse, 61; ox, 58; horse, 57; cat, 56; sheep, 44. In fresh blood these measurements may, perhaps, be depended upon; but when the blood has been dried the corpuscles change their form, and it would probably be impossible to determine whether the stain were from human blood or not. As for determining the blood of one person from that of another, there does not seem to be any possibility of doing so; indeed, so far as experiment has gone, it appears that there may be more difference in the corpuscles of the same man's blood, taken at different times or from different parts, than between the corpuscles of the blood of different persons. The examination of stains has been a prominent feature in some recent trials for murder, but it does not appear that any considerable dependence has been placed upon the testimony of experts, partly because scientific testimony of such a nature is difficult to comprehend, and partly because experts themselves of equal attainments differ widely in their conclusions.

BLOOM'ARY, or **BLO'MARY**, a furnace for transforming pig-iron to wrought or malleable iron, or for making such iron directly from ore. When ore is used, a mass of iron called a "bloom" is produced, instead of the impure pig-iron that runs from the melted metal in a blast-furnace. The B. process is one of the oldest in iron-working, and is used in rude forms in some still barbarous countries. The best of modern bloomaries are the German and the Catalan (Spanish) furnaces, in which ores are reduced chiefly by means of charcoal. The best of ore should be used, as the waste is much greater in poor ore. In the Catalan the charcoal, with a large part of the iron, is heaped on a square hearth opposite to the tuyere, charcoal and fine ore being added from time to time, while a moderate blast is kept up and the mass occasionally stirred. In about six hours the iron settles to the bottom, is taken out in a mass, and forged into a bloom. For the German or more common bloom, the ore is pounded fine and thrown in small quantities upon a charcoal fire, with either hot or cold blast, hot being much the best. The metal settles to the bottom, and is drawn off at intervals, and hammered into "blooms." The process is available in places where wood (for charcoal) and good iron ore are found near each other. Iron so made is of the best quality, and is very desirable for converting into steel.

BLOOMFIELD, a t. in Essex co., N. J., 4 m. n.n.w. of Newark, on the Morris canal, and the Newark, Bloomfield, and Montclair branch of the Delaware, Lackawanna, and Western railroad. It also has connection with Newark by horse-cars. Pop. about 6000. It is a manufacturing place, and the residence of many business men of New York and Newark. It was one of the earliest settlements in the state. The Presbyterian church has here a seminary for the education of German ministers.

BLOOMFIELD, **SAMUEL THOMAS**, D.D., 1790–1869; an English critic, educated at Cambridge, and rector at Bishbrooke, Rutland. He was the author of many critical, doctrinal, and exegetical annotations to the New Testament; translated Thucydides' *History of the Peloponnesian War*; and made English notes to the Greek edition of the New Testament, a work still widely used in England and America.

BLOOMINGTON, a thriving city of central Illinois, the co. seat of McLean co. It is an important railroad center, having connection with St. Louis, Chicago, and Jacksonville, by the Chicago and Alton; with Cairo and Dubuque by the Illinois Central; with Indianapolis and Peoria, by the Indianapolis, Bloomington and Western; and with Toledo, by a division of the Wabash railroad. Pop. '70, 14,190. Here are the large repair-shops of the Chicago and Alton road, employing 1000 men, foundries, furnaces, and coal-mines; and it is an important center of local and general trade. A court-house, lately built of Illinois marble, at a cost of \$100,000, adorns a beautiful square in the heart of the city. It has well-organized public schools, a high-school, a Roman Catholic academy, the Major college for women, 2 daily and 5 weekly papers. Water works are supplied from a large well dug in the prairie. The Illinois Wesleyan university (Methodist Episcopal), founded here in 1857, had, in 1879, 10 professors and 180 students. Its president is W. H. H. Adams, D.D. At Normal, 2 m. n. of the city, at the junction of the Illinois Central and Chicago and Alton railroads, is the Northern Illinois normal university, also organized in 1857. It has an imposing edifice built at a cost of about \$200,000; 14 professors and teachers; 435 students; with 235 pupils in the training schools. Its president is Edwin C. Hewett, LL.D., who succeeded Richard Edwards, LL.D., in 1875. Connected with this institution is the state laboratory of natural history, in charge of prof. S. A. Forbes.

BLOOMINGTON, the seat of justice of Monroe co., Ind., between the branches of White river, 60 m. s.s.w. of Indianapolis, on the Louisville, New Albany and Chicago

railroad. Its people are engaged in manufactures, limestone quarrying, and farm productions. It is the seat of the Indiana university (q. v.), founded by the state in 1828.

BLOUNT, a co. in n. Alabama, on the upper waters of Black Warrior river; intersected by the South and North Alabama railroad; 900 sq. m.; pop. '70, 9945—682 colored. The surface is mountainous, with large forests; productions agricultural. Co. seat, Blountsville.

BLOUNT, a co. in s. e. Tennessee, on the N. Carolina border, intersected by the Knoxville and Augusta railroad; bounded or intersected by the Tennessee, Holston, and Little rivers; 600 sq. m.; pop. '70, 14,237—1460 colored. It has a mountainous surface, and fertile soil, producing wheat, corn, oats, etc., and sorghum molasses. Iron ore, marble, and limestone are found. Co. seat, Marysville.

BLOUNT, WILLIAM, 1744—1800; a politician in North Carolina and Tennessee. He was one of the signers of the federal constitution, governor of the territory of Ohio, and one of the first U. S. senators from Tennessee. He was expelled from the senate on a charge of having conspired to surrender New Orleans to the English. He was afterwards chosen to the Tennessee senate, and made its presiding officer.

BLUE EARTH, a co. in s. Minnesota along the Minnesota river, reached or intersected by the Winona and St. Peter, the St. Paul and Sioux City, and the Minnesota and Northwestern railroads; 750 sq. m.; pop. '80, 21,197. The main business is agriculture. Co. seat, Mankato.

BLUE GRASS, or JUNE GRASS, *Roa pratensis*, a species common in this country and Europe, attaining its highest perfection in Kentucky, where a large region in the middle of the state is called the "blue-grass country," and is noted for its excellent cattle.

BLUEING OF METALS. See TEMPERING METALS, *ante*.

BLUE LAWS, a name given to certain enactments supposed to have been made by the New Haven colony, in Connecticut, in the early days of the settlement. These "laws" never existed; but as usual in the Puritan days the personal conduct of citizens was often subject to judicial supervision and animadversion, and Sabbath-breaking was especially odious to the magistracy. Currency was given to the idea of a code of severe and ridiculous enactments called the blue laws by the notorious tory minister, the Rev. Samuel A. Peters, who had charge of the English churches in Hartford and Hebron, but who was compelled by the revolution to fly to England. There, in 1781, he published his *General History of Connecticut*, a work whose exaggerations and spite make it almost a curiosity. Many years ago a small book containing these supposed laws, which were really extracts from Peters' history, was published, and is even now referred to as authority by some who have not investigated the subject.

BLUE LICK SPRINGS, a village in Nicholas co., Ky., on Licking river, 40 m. n. e. of Frankfort, noted for mineral waters, which are sent in bottles to many parts of the country. They contain lime, magnesia, soda, carbonic acid, sulphureted hydrogen, sulphates, and muriates.

BLUE MONDAY, so-called from a custom in Europe in the 16th c. of decorating churches in blue colors on the Monday preceding Lent, when the people had a holiday; but the excesses committed led to the legal abolition of the custom. In the United States women in some of the rural districts called every Monday by the name, as it is the general day for doing the hard laundry work of the week. In the city any Monday may be blue to workmen who on the day before spend their weekly wage unwisely.

BLUE PETER, a blue flag with a white square in the center, used to signify that the ship on which it is raised, or the fleet of which that is the flagship, is about to sail. "Peter" is a barbarism for the French *partir*, a notice of departure.

BLUE RIVER, in e. Indiana, running s. w. and forming the e. fork of White river. It affords abundant water-power to Newcastle, Shelbyville, and other manufacturing villages.

BLUE RIVER, or BAHR-EL-AZBAK. See NILE, *ante*.

BLUE VITRIOL. See COPPER, *ante*.

BLUNT, EDMUND, 1799—1866; b. Mass.; son of Edmund; hydrographer and marine surveyor, engaged on his own account on the United States coast and in the West Indies, and appointed first assistant in the government coast survey. He introduced the use of the Fresnel light in American light-houses.

BLUNT, EDMUND MARCH, 1770—1862; b. N. H.; author of the *American Coast Pilot*, a most useful work for navigators, which has passed through nearly 30 editions, and been translated into several other languages. He published many other nautical works, charts, etc.

BLUNT, JAMES G., b. Maine, 1826; brig. gen. commanding the department of Kansas during the civil war. He was made a maj. gen. in 1862.

BLUNT, JOHN JAMES, 1794—1855; an English clergyman, author of *Vestiges of ancient Manners and Customs discoverable in Modern Italy and Sicily, Undesigned Coincidences in the Writings both of the Old and New Testaments an Argument of their Veracity*.

History of the Christian Church in the first three Centuries, and Sketches of the Reformation of the Church of England.

BLUNTSCHLI, JOHANN KASPAR, b. Switzerland, 1808; a German jurist; graduated at Bonn in 1829. He was prof. in the university of Zurich, a member of the grand council of the local government, and strongly opposed the civil war of 1847-48. In 1848 he became prof. of German and international law at Munich, and in 1861 prof. of political science at Heidelberg. In 1864, with Baumgarten and others, he founded the Protestant union, and subsequently presided over several Protestant conventions, and over the general synod at Baden in 1867. He was in favor of a union between south and north Germany, and was elected to the customs parliament. B. is the author of many valuable works on politics, laws, and the sciences.

BOAR, WILD, *Sus scrofa*, a species of *suidæ*, regarded as the original of the domestic swine, equal to the largest in size, and far superior in strength and ferocity. It is of grayish-black color, covered with short woolly hair, thickly interspersed with stiff coarse bristles, which assume the form of a mane along the spine. Its great tusks are formidable weapons, but when old the tusks curve over the snout, and are no longer serviceable for goring; but then the teeth of the upper jaw protrude and curve outward, serving the same purpose as the tusks had done. The animal is native in Europe and Asia, inhabiting the deep recesses of marshy forest grounds. Boars were common in England until the time of Henry II., and then not found until, in the reign of Charles I., an unsuccessful attempt was made to raise them in the New Forest. In the time of the conqueror any one killing a wild boar was liable to have his eyes put out. It was for many centuries a favorite beast of chase with the nobles in Europe, and was hunted chiefly on foot with the spear, its strength and ferocity rendering the sport alike exhilarating and dangerous. There is little of boar-hunting now except in India. The animal seeks its food at night, and feeds chiefly on roots and grain, though it will eat smaller animals, birds' eggs, etc. The bristles of the boar are much used for brushes.

BOARDMAN, GEORGE DANA, 1801-31, b. Maine; educated at Waterville college, where he was chosen tutor. In 1823, he offered to become a missionary under the Baptist board of foreign missions, and having studied at Andover theological seminary, was ordained in 1825, and in the same year sailed for Calcutta. He established a mission at Maulmain in 1827, which soon became the most important station under the board. For three years he labored incessantly with unabating zeal and accomplished an immense amount of work, till his course was cut short by death.

BOARDMAN, GEORGE DANA, D.D., son of George Dana, b. in Burmah, 1828; graduate of Brown university and Newton theological institution; ordained in South Carolina, but became pastor first in Rochester, N.Y., whence he went to the First Baptist church in Philadelphia, where he still remains (1880). He has traveled in the east and in Europe, and has delivered courses of lectures in Philadelphia which have drawn great week-day audiences.

BOBADILLA, FRANCISCO DE, d. 1502; Spanish governor of San Domingo, who was sent from Spain in 1500 to investigate charges of maladministration against Columbus. He arrested the discoverer and sent him in chains to Spain; but the act was disowned by the king, and Columbus was restored and sent back, arriving on the day that B., who had been recalled, sailed for Spain. The fleet was wrecked and B. was drowned. But for his treatment of Columbus this vain and tyrannical man would not have been known in history. Probably Ben Jonson's "Capt. Bobadil," the silly braggart in *Every Man in his Humor*, was suggested by this knight of Calatrava.

BOCCALINI, TRAJANO, 1556-1613; an Italian satirist. Under the favor of Gregory XIII. he held several offices, the most important being that of governor of Benevento. His most important work is *Ragguagli di Parnaso*, in which Apollo is represented as receiving the compliments of all who present themselves, and distributing justice according to the merits of each case. The book is full of light fantastic satire. The only government that escapes his attacks is that of Venice, a city for which he had a special affection. Other works of his were the *Pietra*, and commentaries on Tacitus.

BOCHOLD, or BOCHOLT, a t. in the province of Westphalia, Prussia, on the Aa, 44 m. w.s.w. of Munster. In the neighborhood is a large iron mine. Pop. '71, 6125.

BOCHUM, a chief t. in Westphalia, government of Arnsberg, noted for manufactures of cassimeres, woollens, carpets, hardware, and steel, and considerable trade in grain. Coal-mines are also worked. Pop. '71, 21,192.

BOCK, KARL ERNST, b. Leipsic, 1809; graduate of the university there. He devoted himself to medicine and anatomy, and became professor in the university and director of the clinical department. He is the author of a number of important anatomical works, an atlas of anatomy, etc.

BOCKENHEIM, a manufacturing t. in Germany, 1 m. from Frankfort, on the Main and Weser railroad; pop. '71, 8476.

BÖCKLIN, ARNOLD, b. 1827; a Swiss painter; a professor of landscape painting in Weimar academy in 1860-62. He is noted for success in ideal scenery, and among his pictures are "Amazons Hunting in a Forest," "A Panic," etc.

BODE, JOHANN ELERT, 1741-1826; an eminent German astronomer. When a boy he made astronomical observations from the garret of his father's house, with a telescope constructed by himself, and at the age of 19 calculated an eclipse of the sun. The next year he wrote on the solar eclipse of Aug. 5, and an elementary treatise on astronomy which was especially successful. In 1774, he commenced the *Astronomical Year-Book*, which is still continued. But his fame rests chiefly on the *Uranographia*, published in 1801, in which he gives observations on 17,240 stars, or 12,000 more than can be found in any previous charts.

Bode reproduced the statement of the relations of the planetary distances, previously made known by Titius of Wittenberg, but afterwards called "Bode's law." It assumes the series of numbers, 0, 3, 6, 12, 24, 48, 96, etc., each term after the second being twice the preceding term; to each term 4 is added, producing the series, 4, 7, 10, 14, 28, 56, 100, etc., whose terms correspond roughly to the distances of the planets from the sun, when stated in 10 millions of miles, thus: Mercury, 3.5; Venus, 6.8; Earth, 9.1; Mars, 13.9; Minor planets, 22-34.9, average 28.4; Jupiter, 47.6; Saturn, 87.2; Uranus, 175.4. Thus far the approximation is tolerably close, but the next terms are far apart. The number of the series is 388, while the corresponding planetary distance is but 274.6. The "law" needs, first, a demonstration of its causes; second, an explanation of its discrepancies; then it should be called the law of Titius.

BO'DENSTEDT, FRIEDRICH MARTIN, b. 1819; when young, a private tutor in the family of prince Galitzin. He subsequently traveled in the Crimea, Greece, Asia Minor, and the Caucasus, publishing *The People of the Caucasus*, and *A Thousand and One Days in the East*. After some experience in journalism he became professor in the university of Munich, lecturing on Slavonic languages and literature. In 1851, he published the *Songs of Mirza Schaffy*, supposed to have been translations from the Persian, but really original, which attained remarkable success. He is the author of various other poems, and assisted in German translations of Shakespeare.

BODIN, JEAN, 1530-96; a French lawyer and politician, author of a number of philosophical works. His greatest effort was the *Six Books of the Republic*, the first elaborate attempt in modern times to construct a system of political science. Only four years afterwards, as if to prove that great minds have great weaknesses, he wrote a work expressing the fullest belief in demonology and sorcery. The duke of Alençon gave B. many preferments, and took him with him when he went to London to solicit the hand of queen Elizabeth. B. was much worried between the Protestants and the league, and was accused of being on both sides. That he was disposed to liberality is shown in a posthumous work in the form of a dialogue, in which a Jew, a Mohammedan, a Lutheran, a Zuinglian, a Roman Catholic, an Epicurean, and a Theist take part. The conclusion to which they all come is that they will live together in charity and toleration, and cease from further disputations about religion.

BODY'S ISLAND, the sand strip between Roanoke and Albemarle sounds, n. of Oregon inlet, in Dare co., N. C. There is a light on the island, 156 ft. above tide, in 35° 48' n., and 75° 33' west.

BŒUF, BAYOU, an overflow stream in Arkansas and Louisiana, fed in time of inundation by the Mississippi. It unites with Washita river, and at high water offers 100 m. of steamboat navigation.

BOGARDUS, EVERARDUS, a minister of the early Dutch Reformed church in New Amsterdam. In 1638 he married Anneke Jans, a widow, who owned 60 acres of land in what is now an important business part of New York. The farm subsequently came into possession of Trinity church, and has been the occasion of many law suits for recovery by the heirs of Bogardus; but they are all in vain, the church's title being complete. In 1647, Bogardus sailed for Holland to answer certain charges made by his ecclesiastical superiors, but lost his life by shipwreck in Bristol channel.

BOGARDUS, JAMES, b. New York, 1800; an inventor. Among his notable works are: the eight day, three wheeled, chronometer clock, and several other improvements in time pieces; the ring-flyer for spinning cotton; the eccentric mill, in which both stones run the same way but with different speed; an engraving machine; a transfer machine for producing bank-note plates from separate dies; the first dry gas meter; the first pencil-case without a slot; a medallion engraving machine; a machine for engine-turning; the accepted method for making stamps for penny postage; a machine for pressing glass; several machines for cutting and working India-rubber; a new horse-power; a dynamometer, and other contrivances of less importance. In 1847 he put up for his factory a cast-iron building, the first one of that material ever erected. Soon afterwards he introduced wrought-iron beams.

BO'GENHAUSEN, a village in Bavaria, the seat of the royal observatory of Munich, 2 m. n.e. of that city. The observatory, one of the best in the world, is in 48° 8' n., and 11° 36' east.

BOGGS, CHARLES STUART, b. N. J., 1811; rear-admiral in the U. S. navy, retired in 1873. He commanded the *Varuna* at the passage of the forts below New Orleans, and was specially praised by Farragut.

BOGHEAD COAL, bituminous coal of Scotland, more valuable for making gas than for fuel. Named from the chief place of deposit, Boghead, Linlithgowshire.

BO'GOS, negroes living in the highlands n. of Abyssinia, believed to number about 10,000, and speaking the Belen and Tigre tongues. They profess Christianity, but have little knowledge of it, and are tributary to Abyssinia. Their country is rich in fine timber, fruits, and wild animals.

BOGUS, bad, or counterfeit; colloquially applied to coin, notes, and even persons, to indicate spuriousness or fraud. It is said to be a partial pronunciation of the name of one Bonghese, a counterfeiter and rogue in general, who some years ago victimized the people of the western states.

BOHADDIN, or BOHA-EDDYN (ABUL-MOHASSEN YUSUF-IBN-SHEDAD), 1145-1233; an Arabian writer and statesman, eminent in the study of the Koran, as well as in jurisprudence. By a work on the *Laws and Discipline of Sacred War*, he gained the favor of the famous Saladin, and was attached to the sultan thereafter, serving in several embassies, and as judge of the army, and judge of Jerusalem; under Saladin's successor he was cadi of Aleppo, where he founded a college. B. continued his intellectual labors to the age of 90. His most important work was a *Life of Saladin*, highly eulogistic, but very instructive.

BOHEMIAN FOREST, or BÖHMERWALD, the mountainous boundary between Bohemia and Bavaria, separating the basins of the Elbe and the Danube; extending 130 m. from s.e. to n.w.; the highest summits 4848 and 4743 ft above tide. Most of the range is covered with dense forests. A railway crosses it through the valley of the Cham.

BOHEMIAN LANGUAGE and LITERATURE have been subjected to literary culture from about the 9th century. The language is the hardest and strongest of the many dialects of the Slavonic family. It abounds in consonants so mixed that to English eyes the words appear unpronounceable. The Bohemians call themselves Czechs (*Cechi*, pronounced techek-hi), and claim to be the original of their family of peoples. Christianity was introduced near the close of the 9th c., and a few fragments of pre-Christian literature were found in 1817 preserved in a manuscript in a church steeple. The first literary productions of consequence, however, were due to the early German Christians, and were written in Latin. It was not until the beginning of the 14th c., under Charles IV. of Germany, that the native language obtained imperial favor. Dalimil wrote his *Rhyming Chronicle of Bohemia* about 1314, and translations were made from the Latin and other languages into the Bohemian tongue. Sir John Mandeville's travels was one of the books earliest translated, and a complete version of his adventures was made about the end of the century. Among those who should be mentioned as original writers are Thomas Stitny the domestic moralist, Duba the jurist, and Flaska the didactic poet. The next generation witnessed the attempts at both religious and linguistic reform that came to an end in the burning of John Huss and the persecution that followed. The Bohemian language was, indeed, brought into general use, and served the disputants on both sides; but little was assigned to its keeping except the ephemeral productions of political and ecclesiastical strife. A large collection of these works, saved from destruction by the invading Swedes, is still preserved in the library of Stockholm. Of more permanent interest is Paul Zidek's *History of the World*, the travels of Leo of Rosmital through various parts of Europe; those of Kobatnik in Egypt and Asia Minor, and of John of Lobkowitz in Palestine. In the 16th c. there was a remarkable development of prose in various departments of literature. Weleslawin, Paprocky, and Hayek of Liboczun wrote popular histories; Wratislas of Mitrovic, and Prefat of Wilkanowa gave accounts of their travels; and Nicolas Konec, Dobrensky, and Lomnický produced didactic works. A long period of literary decadence followed the battle of White Mountain (1620); the best blood of the nation went into exile, and such Bohemian literature as came forth appeared in foreign countries. In 1774 a severe blow was struck at the native language by Maria Theresa's decree which enforced the use of German in the higher and middle schools of the country. But the defense of the native tongue was taken up by count Kinsky, Hauka of Haukenstein, the historian Pelzel, and the Jesuit Balbin. Other scholars espoused the cause, and a chair of the Bohemian language was founded at Prague, and in 1818 a Bohemian museum was established in connection with a society that devoted itself to the study of national antiquities, which society published a journal. Puchmayer, 1795-1820, gave an impulse to national poetry, and was succeeded by Langer, Rokowocel, Schneider, Czelakowsky, H. Kollar, and many other writers. In science Presl, Sadek, Amerling, Smetana, Petcina, Sloboda, and Opiz have attained distinction. The names of writers in politics, theology, and philosophy are too numerous to mention.

BOHLEN, PETER VON, 1796-1840; a German oriental scholar, mainly self-educated; professor of oriental languages in the universities of Halle, Bonn, and Königsberg. His works, except an autobiography, are mostly on the languages of the East.

BÖHLER, PETER, 1712-75; a German theologian and Moravian bishop, who came to America in 1783, and founded the village of Nazareth, in Pennsylvania.

BÖHM, THEOBALD, a Bavarian flute-player, b. 1802; the inventor of the flute bearing his name, which has superseded the old kinds. He had some reputation as a composer.

BOHOL', or **Bool**, one of the Philippine islands, discovered by Magellan in 1521: in 9° 54' n., and 124° 21' e.; 46 by 32 m.; produces rice, cotton, cocoa-nuts, cocoa-nut oil, cattle, and coarse silk. There is some gold in the rivers.

BOHTLINGK, OTTO, b. St. Petersburg, 1815; a member of the academy of science and counselor of state; well versed in Sanskrit, Yakut, and oriental tongues. His main work is a comprehensive Sanskrit-German dictionary in 7 vols., in which he had the assistance of prof. Rudolf Roth, of Tübingen.

BOHUN UPAS. See **UPAS**, *ante*.

BOILERS (*ante*). Those most distinctively American are the sectional or water-tube boilers. The Babcock and Wilcox boiler consists of a series of tubes inclined from the front to the rear, and connected at each end by a manifold chamber. The forward ends are connected to the steam-drum, which lies lengthwise of the boiler. The tubes and manifolds are in the fire chamber, and there are two sets of diaphragm plates, by which the hot gas, after rising, is deflected, first downward and then upward, being made to cross the stack of tubes three times before making its exit into the chimney. The water fills the tubes and occupies the lower part of the steam-drum. The tubes of the Root boiler are likewise inclined from front to rear; they are joined at the ends by triangular caps and crow-feet, and the joints are perfected by rubber gaskets. The joints are outside the fire chamber, and the steam-drum lies crosswise of the boiler. The water does not fill all the tube-space within the fire-box, nor enter the steam-drum; by this means dry steam is secured, while the danger of superheating is but slight, as the space not reached by the water lies in the upper and forward part of the fire-box. The Whittingham boiler has its tubes, connections, and steam-drum, all inclosed in the fire-box; the tubes are traversed by interior tubes, or flues, through which the hot gases are conveyed, and thus a large fire surface is secured. The Harrison boiler is made of cast-iron spherical shells, 8 in. in external diameter, and $\frac{3}{4}$ of an in. thick: they are cast in sections, 2 or 4 spheres together, are connected by curved necks of $3\frac{1}{4}$ in. diameter, and are held together by wrought-iron bolts and caps. The joints are accurately fitted, without packing.

The water surface of a boiler is that area of metal which has water within and flame or hot gases without; at this surface the steam is generated. The area which has hot gases without and steam within is superheating surface, at which the steam by the reception of heat acquires greater expansive force. The draught-area, or calorimeter, is the cross section of the area traversed by the hot gases from the fire, and may be taken at any point between the furnace and the chimney. Ordinarily, however, it is restricted to the space around the tubes in the water-tube boilers, and to the section of the flues in flue-boilers. That boiler is most efficient which shows the greatest difference between the furnace temperature and that found at the chimney, since that difference indicates the quantity of heat which has been transferred to the water in the generation of steam. If the combustion is complete, the heat of the furnace will depend on the quantity of air furnished, that is, upon the area of the calorimeter, whence it appears that the calorimeter should be large. But if this space be an unbroken volume, much of the hot gas may pass through without impinging against the boiler surface, and delivering its heat, whence it is desirable that the space should be divided thoroughly; and it is evident that a reduced calorimeter may often give better results than a larger one, not properly arranged. A designer of boilers will find important tables on this point in *Appleton's Cyclopædia of Mechanics*.

Priming is the tendency of the water in the boiler to form spray by the bursting of the steam bubbles when they come to the surface of the water, the spray going forward with the steam into the cylinder. Here it is cooled and accumulates, especially if the exhaust port is not, either by position or capacity, adequate to its discharge. Water is practically incompressible, and if a quantity of it, greater than the volume of the clearance, is found before the piston, near the end of the stroke, it lies between the piston and the cylinder head as mischievous as a mass of metal would be in the same position. Something must yield. The crank pin may be broken, or the cylinder split, or the head burst out, and all rods and gearing will be ruined. Priming is caused by want of steam room, or of area at the surface of the water in the bodies, or by the use of dirty water. The latter cause may be cured by collecting the water in tanks, and giving it time to settle. The others may be avoided by proper construction of the boiler, by checking the steam at the throttle, or by working the engine more expansively. Any sudden removal of pressure, as the opening of the safety-valve, or of the throttle in starting, tends to produce priming, because while the water had, at the instant of the opening, a capacity for steam corresponding to the higher pressure, the diminished pressure sets free a gush of steam that is entirely disproportioned to the ordinary conditions. Some authorities advise the insertion of a perforated plate through which the steam must pass on its way to the cylinder; the water beating against this plate is arrested, and the steam passes on more freely. In some locomotives the steam is taken by a longitudinal perforated pipe, which serves the purpose of the steam dome of usual designs. Boilers in which the

steam does not circulate freely because of the disposition of the tubes, are liable to the annoyance of priming.

The term *horse-power*, when applied to the boiler, has a meaning scarcely more definite than when used to indicate the capacity of the engine. In either case, the horse-power realized depends as much upon the method of using the mechanism, as upon its original construction. The best authorities agree that the horse-power of the boiler should indicate the actual evaporation of water, instead of the size of the boiler or the efficiency which may be secured through the engine. The ability to evaporate a cubic foot of water per hour, making steam at 212° F., has been suggested as a suitable unit to be called a horse-power. To ascertain the evaporative power of a boiler by experiment, it is necessary to obtain the weights of fuel and water, and to know the quality of the steam produced. A trial should last 24 hours; steam may be raised, and then fire withdrawn, and the ash-pit cleared, the steam meanwhile being maintained with wood. Coal is then added, and as soon as it is fired, the test begins. Note is taken of the height of water in the gauge, and the water is left at the same height at the end of the test. Coal is carefully weighed in regular amounts and at regular intervals to avoid errors. At the end of the trial the fire is withdrawn, and the remaining coal weighed as soon as possible; this weight, plus that of the ashes made during the experiment, taken from the weight of the coal, gives the weight of fuel consumed. To find the quality of the steam, a tank is provided, which is traversed by a pipe leading to the boiler, the whole apparatus being so arranged as to waste as little heat as possible. The tank is filled with water, and steam is admitted through the pipe in such quantity as may be condensed by the water. We have to note the pressure of the steam, the weight and temperature of the water before steam is admitted, the weight and temperature at the close of the test, the weight and temperature of the water formed from the condensed steam, and the time. Experiment must also be made to test the loss of heat by radiation and evaporation, which is done by heating a given quantity of water to a given temperature in the same tank, and noting the loss in weight and temperature during a given time. To illustrate by an example. Suppose a test made, from which these data have been secured: Coal used, 5980 lbs.; feed-water used, 42,320 lbs.; coal withdrawn at end of test, with ashes, 1830 lbs.; hence, coal burned in the test, $5980 \text{ minus } 1830 = 4150$ lbs. The apparent evaporation per pound of coal is, $42,320 \div 4150 = 10.2$ lbs., if the steam were dry. To test the quality of the steam the described apparatus has been used, and these data noted: Pressure of steam at gauge, 80 lbs.; weight of steam condensed at 95° , 204 lbs.; initial temperature of water for condensing, 60° ; final temperature, 92° ; head of water in tank, 27 in.; time of trial, 24 hours; and by former tests it appears that 4 cu. ft. of water, weighing 62.2 lbs. per ft., pass from the tank per hour, and that the loss of heat by evaporation and radiation is 1480 thermal units per hour. The heat given to the water by the condensing steam in one hour was $4 \times 62.2 \times (95 \text{ minus } 60) + 1480 = 8708$ thermal units. The steam condensed per hour was $204 \div 24 = 8.5$ lbs., hence each pound of steam communicated to the water $8708 \div 8.5 = 1024.5$ thermal units of heat. But this condensed steam was discharged at 95° ; to bring it down to the standard of 32° there must have been a farther reduction of $95 \text{ minus } 30 = 65$ thermal units, showing that the quantity of heat above freezing standard held by a pound of steam as it issued from the boiler was $1024.5 + 65 = 1089.5$ thermal units. The total heat, above freezing standard, of a pound of dry steam at 80 lbs. pressure (see Rankine, *Steam Engine*, or *Appleton's Cyc. of Mechanics*), is 1177.1; it is therefore evident that the steam used in the test contained some moisture. As the temperature of the feed-water was 60° , it had already 28 thermal units of heat per pound above water at 32° , and would require $1177.1 \text{ minus } 28 = 1149.1$ thermal units to change it to dry steam; but it required $1089.5 \text{ minus } 28 = 1061.5$ thermal units to change it to steam of the quality observed, hence the actual evaporation was $1061.5 \div 1149.1 = 0.91506$ of the apparent evaporation. But the apparent evaporation was 8.5 lbs. per pound of coal, and the actual was therefore 7.778 lbs. If the feed-water were at 212° , 998.5 thermal units would be required to convert a pound of water into steam. Hence, $1061.5 \div 998.5 = 10.6 =$ nearly the evaporation per pound from and at 212° .

BOILING OF LIQUIDS (*ante*). As will be understood from the above, the terms liquid and boiling-point are entirely relative, depending upon external agents and upon each other. The statement that water is a liquid is only true under certain conditions. In the arctic regions it is a solid, and in a vessel heated to 212° under ordinary atmospheric pressure it is a vapor or gas. Nitrous oxide is a liquid under ordinary atmospheric pressure when reduced below 126° below zero, and the same is true of carbonic acid when reduced to 108.76° . Pressure, however, is capable of reducing both these gases to liquids, and modern experiments with various substances are now common in which carbonic acid is liquefied by pressure. Ammonia, commonly a gas, is a liquid when reduced to -28.66° . This substance is capable of being absorbed by a very small volume of water under heavy pressure, or, at least, of occupying a very small volume; for we cannot say that the gas is really absorbed; the water assists the pressure in holding the gas in a liquid form. Advantage is taken of this in the working of a certain class of ice-making machines, called ammonia machines (q.v.). Some of the machines, however, depend upon the vaporization of ammonia, anhydrous, or nearly so, for the absorption of sensible heat. The following is a table of the boiling-points of various substances:

SUBSTANCE.	B. point F.	Barom. meas.
Nitrous oxide.....	-126.22°	29.88
Carbonic acid.....	-108.76	30.21
Ammonia.....	-28.66	29.50
Sulphurous acid.....	13.10	29.29
Chloride of ethyl.....	51.80	29.84
Aldehyde.....	67.64	28.90
Sulphuric ether.....	93.56	29.21
Sulphide of carbon.....	118.22	29.76
Bromine.....	145.40	29.92
Alcohol.....	173.32	29.92
Water.....	212.00	29.92
Acetic acid.....	242.42	29.53
Sulphuric acid.....	640.00	29.92
Mercury.....	662.00	29.92

The investigations of prof. Kopp indicate certain remarkable laws connecting the boiling-points of classes of liquids with their chemical constitution. The following tables, calculated from the observations of prof. Kopp and others, show that in the group of alcohols, and the acids derived from them by oxidation—both of which differ in constitution by one molecule of CH_2 —there is a difference of very nearly 34.2°F. between successive members of the series; and that, moreover, the difference in the boiling-points between the alcohols and their respectively derived acids is about 72° .

Alcohol.	Formula.	B. point. cal.
Methylic alcohol.. ..	CH_4O	138.2°
Ethylic alcohol.....	$\text{C}_2\text{H}_6\text{O}$	174.2
Tritylic alcohol.....	$\text{C}_3\text{H}_8\text{O}$	206.6
Tetrylic alcohol.....	$\text{C}_4\text{H}_{10}\text{O}$	240.8
Amylic alcohol.....	$\text{C}_5\text{H}_{12}\text{O}$	275.0
Acid.	Formula.	B. point cal.
Formic acid.....	CH_2O_2	210.2
Acetic acid.....	$\text{C}_2\text{H}_4\text{O}_2$	244.4
Propionic acid.....	$\text{C}_3\text{H}_6\text{O}_2$	278.6
Butyric acid.....	$\text{C}_4\text{H}_8\text{O}_2$	312.8
Valeric acid.....	$\text{C}_5\text{H}_{10}\text{O}_2$	347.0

Other analogous correspondences in the boiling-points of liquids and their chemical constitution were observed; thus in the series of hydrocarbons, homologous with benzole, C_6H_6 , a difference in the series of CH_2 was attended with a difference of boiling-point of about 43° .

The molecular constitution, or, more strictly speaking, the mutual relations between the molecules of liquids, particularly as regards water, whose affinities are so numerous, exerts a great influence not only upon the boiling-point, but upon the nature or manner of ebullition. Thus, if a clean glass flask is partially filled with ordinary, and, of course, more or less aerated spring water, and heated rapidly with a spirit-lamp, nearly all the air will be expelled first, but before all the air is thus expelled ebullition will commence, and at a point very slightly below 212° . After a little time, more of the air having disappeared, but not entirely, the boiling-point (at 30 in. mercurial pressure) will be 212° . By continuing the boiling, however, the mode of ebullition will be found to have changed. If the flask is held quite still there will be intervals of time—although the application of heat is constant—when ebullition will cease; and during these intervals the temperature will rise. If the heat is taken away for a few moments so as to allow the water to come to a state of comparative rest, and then reapplied, the temperature may be raised to 220° before ebullition commences, when it will be decidedly explosive. If now the flask is corked tight, and a partial vacuum formed in the space occupied by vapor, boiling will go on until the water is quite cool, but the boiling will be of the explosive character observed in the later periods of application of heat, and when quite cool will be more irregular, partly in consequence of the reduction of atmospheric pressure, but more particularly, probably because of the increased cohesion between the contiguous molecules of water by reduction of heat.

BOIS D'ARC. See OSAGE ORANGE, *ante*.

BOISÉ, a co. in s.w. Idaho, on Little Salmon river; about 2500 sq.m.; pop. '70, 3834—1754 Chinese. It is a mining region. Co. seat, Idaho City.

BOISÉ CITY, in Idaho, capital and chief city of the territory, on the Boisé river, 285 m. n.w. of Salt Lake City, and 520 m. n.e. of San Francisco. It has a government assay office, and a penitentiary. It is on the site of an old trading-post of the Hudson Bay company.

BOIVIN, MARIE ANNE VICTOIRE GILLAIN. 1773-1841; educated in a nunnery; studied anatomy and midwifery; married and was soon left a widow, when she took the place of midwife in the maternité hospital, and in 1801 became superintendent. She caused the establishment by Chaptal of a special school of accouchement. Her *Memoir de l'Art des Accouchements* is a well-known work.

BOKER, GEORGE HENRY, b. Philadelphia, 1824; graduated at Princeton; studied but did not follow the law. In 1847, he published a volume, *The Lesson of Life and other Poems*, and soon afterwards *Calagnos, a Tragedy*, which was acted in London. This was followed by *Anne Boleyn*, *Leonor de Guzman*, and *Francesca da Rimini*. A few years later he published his *Plays and Poems*, and in 1864, *Poems of the War*. In 1871, he was appointed United States minister resident at Constantinople.

BOL, FERDINAND, 1611-81; a Dutch painter, pupil and imitator of Rembrandt. Many of his paintings are to be seen in Amsterdam.

BOLAS, a missile used by South American Indians in capturing wild cattle. It consists of two balls covered with leather, united by a narrow but stout thong. The cattle-hunter holding one ball swings the other around his head until proper momentum is gained, and then launches the B. at the legs of the animal, which it instantly ties together, rendering him helpless. The B. has been effectively used in war. If the balls be of iron or lead, it may be thrown a great distance.

BOLGRAD, a t. in Moldavia, 28 m. n.w. of Ismail; pop. '66, 9114. B. was formerly in Bessarabia, but was ceded to Moldavia by Russia in the Paris treaty.

BOLIVAR, a co. in Mississippi on the M. river. 800 sq.m.; pop. '70, 9732-7816 colored. The land is low and swampy, and little cultivated. Co seat, Rosedale.

BOLIVAR, one of the United States of Colombia, lying on the Caribbean sea; 21,345 sq.m.; pop. '71, 247,100; chief town and capital, Carthagena. The country is level and covered with forests. Magdalena river forms its w. boundary.

BOLIVAR CITY. See ANGOSTURA, *ante*.

BOLLAN, WILLIAM, d. 1776; an English lawyer, son-in-law of gov. Shirley of the colony of Massachusetts, and the agent to obtain from England the money advanced by the colony for the expedition against cape Breton. He favored conciliation toward the colonies, and wrote on American affairs; among other works, *Freedom of Speech, and Writing upon Public Affairs Considered*, and *Ancient Rights to the American Fishery Examined and Stated*.

BOL'LINGER, a co. in s.e. Missouri on Little river; intersected by the St. Louis and Iron mountain railroad; 450 sq.m.; pop. '70, 8162. It is level with fertile soil; productions chiefly agricultural. Co. seat, Dallas.

BOLOGNA, GIOVANNI DA, 1524-1608; an Italian sculptor and architect, whose only superior was Michael Angelo. He designed the fountain in Bologna and its celebrated figure of Neptune. At Florence may be seen his "Rape of the Sabine Women," and a bronze statue of Mercury. He was extensively employed in important public works.

BOLOGNESE SCHOOL OF PAINTING. Franco, who was commended by Dante for superiority in missal-painting, and who has been called the Giotto of his school, is the supposed founder of the style of the Bolognese painters of the 14th century. Many of their now fading works exist in the church di Mezzaratta, a gallery, as it were, of ancient specimens, which is to this era of the Bolognese school what the Campo Santo at Pisa is to that of the Florentines. About 1400, the most prominent name is Lippo Dalmasio, some of whose works remain. Malvasia relates, with reference to one in the church of S. Procolo, that he heard Guido extol its purity and grandeur of expression, and assert that no modern painter could infuse so holy a feeling into similar subjects. Francesco Francia, who was contemporary with Raphael, and survived him some years, is celebrated as a painter who succeeded beyond most others in giving an expression of sanctity and purity to his madonnas, and a letter of Raphael's is extant in which this merit is particularly alluded to. His eulogists, however, have vainly endeavored to exalt him to a level with Raphael or Titian. Niccolo dell' Abate is associated with the Bolognese painters by some works at Bologna, by his joint labors with Primaticcio at Fontainebleau, and by the extravagant compliment paid to him in a sonnet by Agostino Caracci as uniting in himself all the excellences of all the great masters. Pelligrino Tibaldi, a pupil of Michael Angelo, is another celebrated name. The Caracci, of whom we shall soon speak, honored him with the appellation of "the reformed Michael Angelo." Baroccio led the way, about 1565, in including Correggio among the great models to be imitated, and we find that Ludovico Caracci, and his younger cousins Agostino and Annibale Caracci united their efforts to introduce a new style patterned in some respects after that great master. They founded a school of instruction which exerted a great influence. The fame of the Caracci was soon established by their works; but the opposition of the abettors of the old school was not silenced until the frescos in the Palazzo Magnani were executed. The constant reference of these masters to nature was the point of objection on the part of the old school. Annibale Caracci painted in various churches in Rome; but his great work, the monument of his powers and the specimen of the school most frequently quoted, and in which Agostino assisted, is the series of frescos in the Farnese palace. The followers of Ludovico at Bologna were true to the founder of the school, and posterity seems to have decided that he was more original than Annibale. Sir Joshua Reynolds praised "his unaffected breadth of light and shadow, the simplicity of the coloring," and "the solemn twilight" diffused over his pictures, as corresponding better with grave and dignified

subjects "than the more artificial brilliancy of sunshine which enlightens the pictures of Titian." Indeed, the principles and practice of these Bolognese masters and their scholars superseded for a time every other style in Italy. Among the numerous scholars of the Caracci, Domenichino holds the first rank. He was declared by Poussin to be the greatest painter after Raphael, and by some modern critics he has been preferred to the Caracci themselves. Among the other eminent painters of the Bolognese school are Guercino, Lanfranco, Tiarrini, Lionello Spada, Cavedone, and Carlo Cignani. During the present century the school has lost something of its former high rank. The British national gallery contains more than twenty pictures by artists of this school.

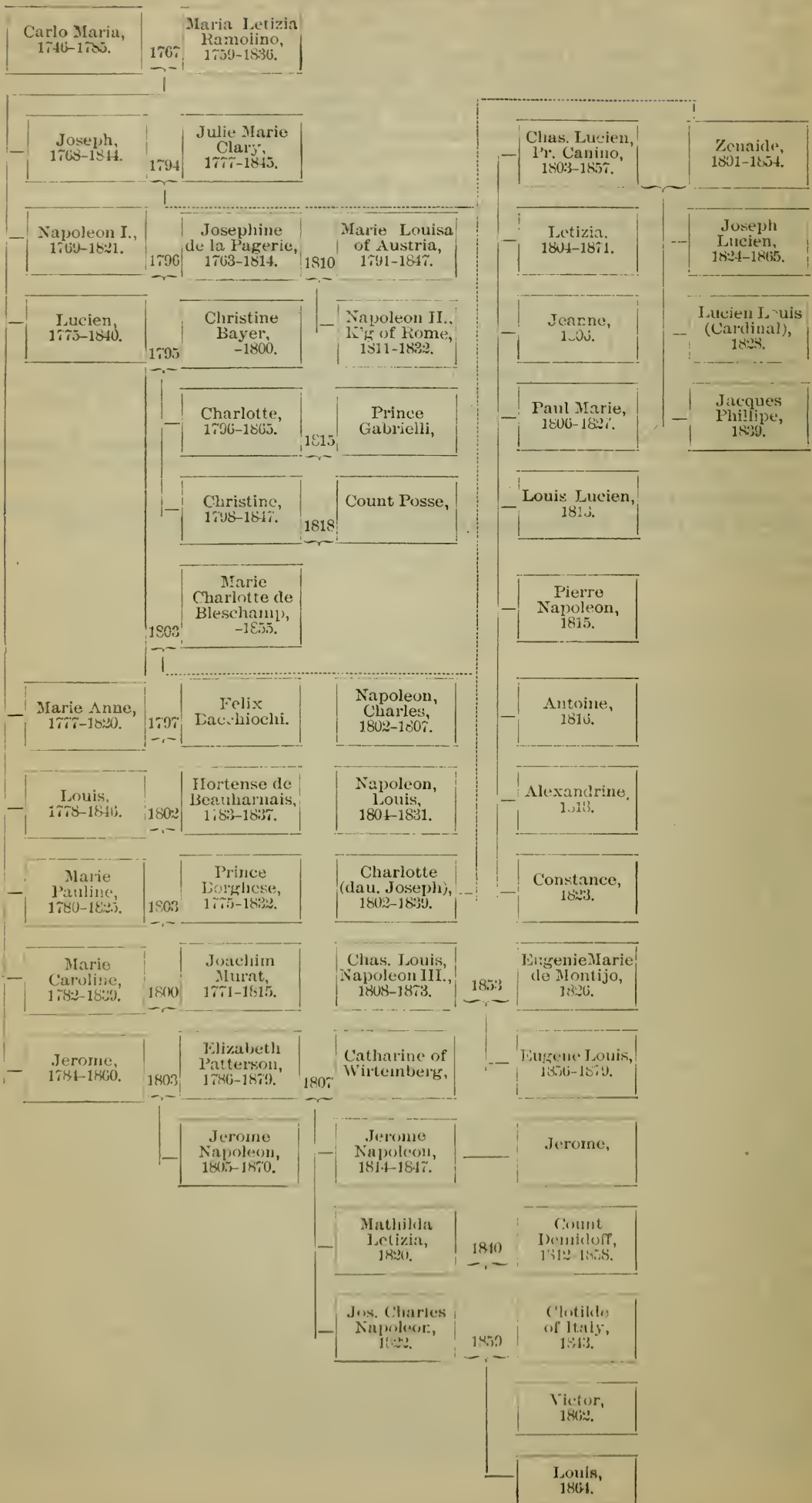
BOLZA'NO, BERNHARD; 1781-1848; a Roman Catholic theologian and philosopher. At 24 he took orders and was appointed professor of the philosophy of religion at the philosophical faculty in Prague. In his lectures he endeavored so to present the Roman Catholic theology as to show its complete harmony with reason, but his views met with much opposition. In 1820, he was accused of connection with some students' societies, and was compelled to resign. Several doctrines found in his works were condemned at Rome, and he was suspended from his priestly functions. The remainder of his life he devoted to literary work. He left 25 volumes, on logic, on the philosophy of Roman Catholic dogmas, on mathematics, and on autobiography.

BOMB LANCE, a sharp-pointed projectile used in whale fishing, charged like a grenade, and shot from a musket, the slow fuse that explodes it being first lighted. Its power is sufficient to stun the whale.

BONA, GIOVANNI, 1609-74; an Italian cardinal, author of *De Principiis Vitæ Christianæ*, and a work on the liturgy which is accepted as authority. He was also a co-worker in the *Acta Sanctorum*.

BONAPARTE (*ante*), also NAPOLEON, *ante*. The following table shows the relationships of this family, whose members have been so prominent in modern Europe:

THE BONAPARTE FAMILY.



Prince Lucien Bonaparte names the following who, 1860, are in order of succession: 1. Cardinal Bonaparte. 2. Napoleon Charles, brother of the cardinal. 3. Louis Lucien. 4. Pierre Napoleon. 5. Jerome, grandson of Jerome, the youngest brother of Napoleon.

BONAVENTURE, a co. in the province of Quebec, Canada, on the bay of Chaleurs, separated from New Brunswick by the Mistouche and Ristigouche rivers; 3290 sq.m.; pop. '71, 15,923. Capital, New Carlisle.

BOND, in law (*ante*), is simple or conditional, the latter being generally used. It must be in writing, and signed, and should be sealed. The condition is the vital part, limiting and determining the amount to be paid or the thing to be done, and no person can take the benefit of a B. except the parties named therein, save in the case of a B. given by an officer for the performance of duty. If a B. runs to several persons jointly, all must join in suit for breach, although the conditions may not at all affect some of them. Recovery against a surety on a B. is not limited to the penalty, but may go beyond as far as necessary to include interest from the time of default. A B. dormant for 20 years cannot afterwards be recovered, the presumption being that it has been satisfied. If the maker of a B. binds himself without adding "heirs," the heirs cannot be held, but the executors and administrators are liable.

BOND, a co. in s.w. Illinois, intersected by the St. Louis, Vandalia, and Terre Haute railroad; 400 sq.m.; pop. '70, 13,552, in '80, 15,032. It is a prairie and woodland region, with fertile soil, producing cereals, and having coal mines. Co. seat, Greenville.

BOND, GEORGE PHILLIPS, 1825-65; son of William Cranch, and his assistant in the observatory, succeeding to full charge on his father's death. He published a *Treatise on the Construction of the Rings of Saturn*, and *Elements of the Orbits of Hyperion and the Satellite of Neptune*. That satellite and the 8th of Saturn were discovered by his father and himself. For a work on Donati's comet the royal astronomical society sent him a gold medal.

BOND, THOMAS EMERSON, D.D., 1782-1856; a physician, editor, and minister, b. in Baltimore; professor in Maryland university, and local preacher of the Methodist church. In 1830, he was editor of the *Itinerant*, and in later years for a long time of the *Christian Advocate and Journal*, the leading newspaper of that church. Among his works are *Appeal to the Methodists*, and *Narrative and Defense*.

BOND, WILLIAM CRANCH, 1789-1859; b. Maine; an eminent astronomer. He was self-educated, and had a private observatory at Dorchester, where his discoveries attracted much attention. In 1838, he was chosen by the U. S. government to make observations for the use of the Wilkes's exploring expedition. In 1839, he supervised the construction of the observatory at Harvard, and became its director. He was the inventor of a method of measuring time to a very small fraction of a second, and among the first to employ photography in stellar observations. He was a member of the academy of arts and sciences, and of the philosophical and royal astronomical societies of London.

BÖNDER, in Norway and Sweden, the landowners or farmers. Under the ancient kings of Norway they were a powerful class, and often compelled important concessions from their rulers, or deposed them. They would nearly correspond to burgesses and barons in England.

BONE CAVES, natural excavations containing bones of extinct animals. In England there is one at Kirkdale, in Yorkshire, and one at Bristol; in France there are several in the valley of the Dordogne; there is one at Gailenreuth in Bavaria; and others are in Belgium and Sicily. They are found also in the United States, Mexico, and Brazil. The bones most commonly found are those of the mammoth, rhinoceros, bear, hyena, and lion, and many of herbivorous animals. The caves in England were frequented by hyenas, those on the continent chiefly by bears. In the caves in southern France there have been discovered relics of man and his tools of the stone age, a fact that is thought to point to a high antiquity for the race, as the accompanying bones of animals were not of those domesticated or subjugated by him.

BONESET, or THOROUGHWORT, *eupatorium perfoliatum*, a perennial herb growing in moist soil, much used in the country as a tonic. It has a strong bitter taste, and is taken in the form of hot tea to produce perspiration. If very strong it operates as an emetic. To make B. tea, steep an ounce of dried leaves in a pint of water; let it stand two hours, and strain. It is often used as a substitute for quinine in agues and light fevers.

BONGO, a people of central Africa in the region between 6° and 8° n., and 27° and 29° e., on the tributaries of the White Nile. They are a short-headed race, of medium height, reddish-brown complexion, and black hair. They subsist on sorghum, which they cultivate, fruits, tubers, and fungi that grow naturally, and for meat they eat any living creature—bird, beast, and reptile—except the dog. Tobacco is raised and smoked. They have no cotton or flax, and for the most part wear no more clothing than an ornamental girdle about the loins. They have goats, dogs, and poultry, but cattle and sheep are rare. Iron is plentiful, and is worked with much skill for use and for ornament.

Iron also forms their currency. They have drums, horns, and stringed instruments, in which they take great delight. Marriage is by purchase, and no man is allowed more than three wives. Tattooing is practiced to some extent. Their sepulture resembles that of the Peruvians, the corpse being found in a crouching position with the knees drawn up to the chin; the tombs are frequently marked by rough wooden figures intended to represent the deceased. Of the immortality of the soul they seem to have no notion; and their nearest approach to an idea of a Deity is manifested in a vague reverence for luck; but they believe intensely in goblins and witches in great variety, which are identified with owls, bats, and other noxious animals. Their language is copious and musical, abounding in the vowels *O* and *A*, and is of simple grammatical structure. They number less than 100,000, and are subject to the people of Khartoom.

BONHOMME, a co. in s.e. Dakota, on the Missouri river; 525 sq.m.; pop. '70, 608; '80, 5561. It is an agricultural region. Co. seat, Bonhomme.

BONIN (or ARCHBISHOP) ISLANDS (*ante*), called by the Japanese OGASAWARA, after the daimio who first held them in fief in 1593, or after the navigator of the same name who visited them later. In 1675, a party of Japanese explorers from Nagasaki visited them, and finding them uninhabited, called them Bunin ("no man's"), whence our Bonin. In 1823, capt. Coffin, of the American whaler *Transit*, landed on the most southern island, and named it after himself, which capt. Beechey knew when he arrived in 1827. In 1854, com. M. C. Perry stocked the island with sheep, goats, and cattle, and Bayard Taylor wrote a fine description of the group. In 1877, there were on the island 25 Americans, 17 Englishmen, and a motley company of Hawaiians and others, numbering in all 70 persons. In 1878, it was formally taken possession of, colonized, and a local government established by the mikado. Coffin island is the suggested site of the terminus of the proposed trans-Pacific submarine cable from California to Japan.

BONNER, ROBERT, b. 1824; a printer who established the *New York Ledger* in 1851, and by a new and attractive system of advertising acquired for it an unprecedented circulation. It is a family literary journal, without advertisements. B. is also known as an owner of fast horses, and has had at one time more than a hundred of the most valuable, obtained without regard to cost.

BONNEVILLE, BENJAMIN L. E., b. France about 1795, a graduate of West Point. In 1820, he was constructing a military road in Mississippi; next on frontier duty, and in 1831 started on an exploring expedition to the Rocky mountains and was not heard from for several years. He served in the Florida and Mexican wars, rising to the grade of col., and in 1861 was retired on account of disability, but served during the civil war as superintendent of the recruiting service in Missouri, being raised to brig-gen. in 1865. Washington Irving edited the *Adventures of Captain Bonneville, U.S.A., in the Rocky Mountains and the Far West*.

BONNIVARD, FRANÇOIS DE, 1496-1570; the "prisoner of Chillon." He was educated at Turin, and in 1510 succeeded to the priory of St. Victor, near Geneva. He upheld the cause of the Genevese against the duke of Savoy, and when the duke took the city he was imprisoned for two years. Being liberated, he returned to his priory; but in 1530, while traveling in the service of the republic, he was captured by robbers, and given to his enemy the duke, who imprisoned him in the castle of Chillon until 1536, when he was liberated by the Bernese and Genevese forces. He returned to Geneva (which city was now entirely emancipated), and enjoyed the honors and rewards due to his patriotism, being made one of the council of two hundred. He was the author of a history of Geneva, and left his books and manuscripts to that town.

BONNYCASTLE, CHARLES, 1792-1840; b. in England; son of John, the English mathematician. He assisted in compiling his father's text books, and was the first professor of natural philosophy in the university of Virginia, and also professor of mathematics. He wrote *Inductive Geometry*, and several papers on scientific topics.

BOOK TRADE (*ante*). The book trade in the United States is of comparatively recent growth, although printing was introduced into New York as early as 1683. For scholars and libraries the needed books were imported from Europe, but with the spread of newspapers and the development of education, the increasing demand for books offered to publishers a profit from the reproduction of the best works of English literature. The oldest house in the trade is that of Sower, Potts & Co., whose founder, Christopher Saur, sr., made almanacs and German Bibles, near Philadelphia, in 1740. The book production of this country was estimated, in 1820, to amount to only \$2,500,000, of which about 30 per cent were original American books; for 1830, \$3,000,000, 40 per cent American; for 1840, \$5,500,000, or 12,000,000 volumes, 55 per cent American; for 1850, \$12,500,000, 70 per cent American; for 1856, \$16,000,000, 80 per cent American. These statistics are only estimated, but it shows that the proportion of original American books has steadily increased. The production of books in 1871 was estimated at \$40,000,000; 5632 American books were entered for copyright in 1878, and 6580 in 1879; during 1879, the copyright of 5265 of these was perfected by depositing copies in the library of congress as required by law. The trade is usually classified into three divisions—publishing, jobbing, and retailing; but although there are a great number of persons who sell books and periodicals in connection with some other business, there are

probably not more than 3000 regular bookstores. About 900 names are given in the *American Catalogue* of those who publish occasionally, but nine tenths of the trade is carried on by about 50 publishers. The "subscription publishers" sell their books through agents and canvassers. Publishers of educational books form a special class, although some of the prominent houses, like Scribner, Appleton, and the Harpers, have educational departments in their business. The "jobber" is the middleman, who orders books in large quantities from the publisher, and distributes them among the retail booksellers throughout the country. Many of the larger houses, like Lippincott, combine the business of the publisher, jobber, and retailer; while others, like Houghton, Mifflin & Co., confine themselves to the sale of their own publications. Every spring and fall there is a "trade sale" in New York, at which large numbers of new publications and standard books are sold to the highest bidders among the jobbers and retailers represented at the sales. The American publishers generally allow the retailers from 25 to 40 per cent, and the jobbers 5 per cent more. The usual forms for books published in this country are 12mo for novels, books of poetry, etc., and 8vo for books of travel, treatises, etc. It is customary among publishers to allow the author of a book a "copyright" payment of 10 per cent on the retail price for all sales; but a gross sum is frequently paid to the author, and the book then becomes the sole property of the publisher. The copyright of a book is granted for 28 years, with the privilege of renewal, by the author, his widow, or children, for 14 years more. A copy of the title-page must be registered in the office of the librarian of congress at Washington before publication, and two copies of the best edition must be sent to the same office within 10 days after publication. The fees are 50 cts. for recording entry, and 50 cts. for each copy of record; there is no other expense. This fee does not, as in the case of patents, cover any investigation into the validity of the copyright, the librarian of congress being only a registering and in no sense a judicial officer. The most noteworthy attempt to supply the American book-trade with a bibliography was made in the *Bibliotheca Americana* of Roorbach, a catalogue of publications including American issues from 1820, continued by Kelly, in supplements, to 1871; this is now superseded, for current books, by the *American Catalogue*, issued under the direction of F. Leypoldt, containing entries of all books (including imported editions) in print and for sale in this country July 1, 1876. The first volume, now issued, includes the alphabet by authors and titles, covering about 70,000 entries; the second, in preparation, gives the same books under subject-entries. The trade periodicals are the *Publishers' Weekly*, New York, which was begun as the *Weekly Trade Circular* in 1872, by F. Leypoldt, and which afterwards absorbed Child's *Publishers' Circular*, founded in 1852; and the *American Bookseller*, published fortnightly by the American News Co. The *Publishers' Weekly* is especially valuable for its weekly record of current publications, giving full titles, prices, and other information, entered in accordance with the cataloguing system of the American literary association, and furnished with appended descriptive notes, giving briefly the scope, character, and contents of the books. The *American Bookseller*, besides records of new books, includes monthly a useful index, classified by subjects, of the prominent articles in the periodicals of the month.

BOOLE, GEORGE, LL.D., 1815-64; an English logician and mathematician. He passed an uneventful life, first as principal of a school at Lincoln, afterwards at Waddington, and as professor of mathematics in Queen's college, Cork. He completed two systematic treatises on mathematical subjects, one on *Differential Equations*, and the other on *Finite Differences*, a sequel to the first. Both soon became standard text books. B. is also noted in logic for his work, *An Investigation of the Laws of Thought, on which are founded the Mathematical Theories of Logic and Probabilities*. In 1844, he received the royal medal.

BOONE, a co. of Arkansas, on the Missouri border; 576 sq.m.; pop. '70, 7032-74 colored. The land is fertile, producing grain and dairy articles. Fine variegated marble is found. Co. seat, Harrison.

BOONE, a co. in Illinois, on the Wisconsin border; traversed by the Chicago and Northwestern railroad; 270 sq.m.; pop. '70, 12,942; '80, 11,555. It comprises rolling prairie land and forests; producing wheat, corn, rye, oats, barley, potatoes, hay, butter, cheese, and wool. Co. seat, Belvidere.

BOONE, a co. in central Indiana, intersected by the Indianapolis, Cincinnati and Lafayette railroad; 408 sq.m.; pop. '70, 22,593. It is level, with deep and fertile soil, producing grain, potatoes, wool, sorghum, molasses, etc. Co. seat, Lebanon.

BOONE, a co. in central Iowa, on the Des Moines and Snake rivers; traversed by the Iowa division of the Chicago and Northwestern railroad; 576 sq.m.; pop. '70, 14,584. It has productive soil, with abundance of coal. Co. seat, Boonesboro.

BOONE, a co. in Kentucky, on the Ohio river; traversed by the Louisville, Cincinnati and Lexington railroad; 300 sq.m.; pop. '70, 10,696-1012 colored. It has a hilly surface and fertile soil, producing grain, tobacco, and dairy articles. Co. seat, Burlington.

BOONE, a co. in n.e. Missouri, on the Missouri river; 648 sq.m.; pop. '70, 20,765-4,038 colored; surface, prairie and forest; soil productive; stone, coal and limestone are

found. Co. seat, Columbia. A branch railroad connects the county seat with the St. Louis, Kansas City and Northern railroad.

BOONE, a co. in e. Nebraska, a part of which is in the Pawnee reservation; 600 sq m.; organized since the census of 1870. Pop. '76, 1,099. Co. seat, Albion.

BOONE, a co. in s.w. West Virginia; 550 sq.m.; pop. '70, 4,553—153 colored; hilly and mainly wooded. Co. seat, Madison court house.

BOONE, WILLIAM JONES, D.D., b. South Carolina, 1813; d. China, 1864; first missionary bishop of the Protestant Episcopal church; a graduate at South Carolina college. He went into law practice, but left it for the ministry, and also studied medicine and took his degree. In 1837 he went with his wife as missionary to China, and speedily mastered the difficult language. In 1843 he returned to the United States and was consecrated missionary bishop for China in 1844. He returned to China the next year and continued his labors. He came home twice for the benefit of his health, returning finally in Dec., 1859, to look after the new mission in Japan.

BOONEVILLE, a city in Cooper co., Mo., on the Missouri river, 43 m. n. w. of Jefferson city, in the midst of a fine agricultural and mining region. It is the main market-place for s.w. Missouri and a portion of Arkansas and the Indian territory, at the terminus of the Booneville branch of the Missouri Pacific railroad, where the Missouri, Kansas and Texas railroad crosses the Missouri river. Pop. 3,506.

BOONTON, a t. in New Jersey noted for iron works; on a branch of the Morris and Essex railroad, and the Rockaway river, 40 m. n. w. of New York, in a rough mountain region. The iron works cover 60 acres, and all branches of the manufacture are carried on. The ore is magnetic, and yields from 50 to 75 per cent of metal. There are blast furnaces, rolling-mills, nut and bolt factories, and a mill for making nail kegs, of which 300,000 are used in a year. The motive power is furnished by the river and the Morris canal. The first nail mill in the country was built in old Boontown in 1770. The old village was destroyed early in the present century by the breaking of the dam across the river.

BOORHANPOOR', or BURHAUNPOOR, a t. in India, once the capital of Candeish, 210 m. e. of Surat; pop. 200,000. It is on a high bank of the Taptee river, surrounded by a rampart of brick, and has in the center a palace of brick known as the Red Fort, built by Akbar, who adorned the town with marble halls, a mosque, and gardens, now nearly in ruins. Trade is monopolized by Arabs. B. was founded in 1414 and was for a long time the capital of the country. It was taken in 1599 by Akbar, plundered in 1685 by the Mahrattas, taken from Delhi in 1720, occupied by the English in 1803, restored the same year, and came finally under British protection in 1844.

BOORLOS, or BOURLOS, a lagoon in the Nile delta, Egypt, 5 m. e. of Rosetta; 38 m. long, separated from the Mediterranean by a narrow strip of land, but communicating by a single channel.

BOOTH, EDWIN, son of Junius Brutus, b. Md., 1833; brought up to the stage by his father, making his public appearance in Boston in 1849. In 1851, he supplied his father's place as "Richard III." at the Chatham theater, New York. The next season he went to California, the Sandwich islands, and Australia (1854), returning to New York in 1857. His most important advance was in 1860, when he played Shakespearean parts at the New York Winter Garden with much success; after a visit to England in 1861, he made New York his home, and played there and in other cities as a star. In 1869, "Booth's theater" was built, where, though more and more successful as an artist, he did not succeed as a manager. For the last four or five seasons he has made brief tours through various parts of the country. He is generally regarded as the leading American tragedian, and in a few great characters he is without a rival. He is not a man of imposing bodily appearance, being rather below the medium stature; but his frame is compact, his carriage at once dignified and graceful, his eye piercing, his features grave. He is thoroughly absorbed in his part, and his voice is under such complete control as to express upon occasion any shade of feeling, sentiment, or conviction. His rendering of familiar Shakespearean passages displays a fine appreciation of their substance and of the lights and shades of manner and expression by which their full meaning may be brought out. In his private life he is greatly esteemed.

BOOTH, Sir FELIX, 1775-1850; an English distiller who gave £20,000 to assist the polar expedition of sir John Ross in 1827. His name is found in "Boothia gulf" and the isthmus of "Boothia." Ross named the whole region around the magnetic pole "Boothia Felix."

BOOTH, JOHN WILKES, son of Junius Brutus; b. Md., 1829, d. April 26, 1865. Though like his brother an actor, he did not achieve notable success. During the rebellion he was in strong sympathy with the South, and at the close of the war he and others formed a conspiracy to assassinate president Lincoln, the vice-president, and members of the cabinet. On the night of Good Friday, April 14, 1865, the president attended Ford's theater, with his wife and some personal friends. About 10 p.m., B. made his way to the door of the box, approached the president unseen, and shot him through the

head. Leaping from the box upon the stage, B. exclaimed, "Sic semper tyrannis! The South is avenged!" and escaped by the stage door, where a horse was held for him. In leaping upon the stage he fractured his leg, but with an accomplice he rode 30 m. before resting. When pursuers came up with him he took refuge in a barn, where, as he refused to surrender, he was shot, and died very soon after.

BOOTH, JUNIUS BRUTUS, 1776-1852; an English actor, on his mother's side a relation of John Wilkes, the English statesman. When a boy he went into the navy, but soon left the sea for a printing-office; afterwards studied law, painting, and sculpture. He appeared on the provincial stage, Dec. 13, 1813, and in London in Oct., 1815, at the age of 39. In 1817-18, he and Edmund Kean alternated in the same characters in Drury lane theater. Soon afterwards Booth gained great celebrity in *Richard III.* and "Sir Giles Overreach;" but he was taken with a fancy for travel, and in 1821 arrived at Norfolk, Va. He spent the remainder of his life in the United States, where he was exceptionally popular, and esteemed by many critics to be the greatest tragedian of his time. Though his range of characters was not wide, the people never tired of the best of them, such as "Richard III.," "Sir Giles," "Lear," "Shylock," "Hamlet," and "Iago." In acting he sank the man in the character, and was so intensely carried away that the fencing in *Hamlet* and *Richard* became duels indeed, in which "Richmond" and "Laertes" were compelled to defend themselves in earnest. Like some other great actors, his personal habits were untrustworthy, and late in life there was always much doubt of his being in condition to appear at the places and times promised.

BOOTH, MARY LOUISE, an accomplished author and translator of numerous valuable works from the French, b. New York, April 19, 1831. Her father was descended from one of the earliest settlers, John Booth, a kinsman of sir George Booth, afterwards baron Delamere, who came from England to America about 1649. Her mother is the granddaughter of a French émigré of the revolutionary epoch. Miss Booth's literary career seemed to be foreshadowed in her infancy, as she read Plutarch at five, and Racine in the original at seven; and special care, therefore, was given to her education. At an early age she became a contributor of sketches and translations to various journals; she compiled the *Marble Worker's Manual*, and the *Clock and Watch Maker's Manual*; and devoted herself to the preparation of the first complete *History of the City of New York*, which was published in 1859, a second edition in 1867, and a third edition, revised and brought down to date, in 1880. This work has been extended and illustrated by well-known book collectors. One copy enlarged to folio size, and extended to nine large volumes by the addition of many thousand illustrations, maps, and pictures, is the property of a New York citizen, and is said to be the richest collection of New Yorkiana extant. Another copy with two thousand illustrations is owned by the author, and still another copy has been extended to twenty-two volumes by a gentleman of Chicago. Miss Booth has translated many works from the French, notable among which are Méry's *André Chénier*, Victor Cousin's *Life and Times of Madame de Chévreuse*, Marmier's *Russian Tales*, About's *Germaine* and *The King of the Mountains*, Pascal's *Letters*, Sue's *Mysteries of the People*, etc. In 1861, the civil war broke out, and Miss Booth, who was an ardent republican, devoted her pen to the task of interpreting to her countrymen the words of their friends in Europe. She translated in rapid succession count Agénor de Gasparin's *Uprising of a Great People and America before Europe*, Edouard Laboulaye's *Paris in America*, and Augustin Cochin's *Results of Emancipation and Results of Slavery*, which Charles Sumner declared worth a whole phalanx in the cause of freedom, and in acknowledgment of which she received letters of thanks from president Lincoln and many prominent statesmen of the day. She also translated *Vesper*, *Camille*, and *Human Sorrows* by the countess de Gasparin, and *Happiness* by the count de Gasparin, and maintained during the whole war a constant correspondence with Gasparin, Cochin, Laboulaye, Henri Martin, Montalembert, and other sympathizers with the government, who continually sent documents which she translated and published as a labor of love, in pamphlet form, through the Union League club, in the city journals, and elsewhere. She next turned her attention to Henri Martin's great *History of France*, in seventeen volumes, six of which she translated, but only four of which were published, the encouragement not warranting the continuance of the work. She has since translated Laboulaye's *Fairy Book*, Macé's *Fairy Tales*, and her abridgement of Martin's *History of France* is now in course of publication. In 1867, Miss Booth assumed the sole editorial charge of *Harper's Bazar*, which under her management proved a rapid success, and over which she continues to preside.

BOOTHBAY, a seaport t. in Lincoln co., Me., at the mouth of Damariscotta river, 13 m. s.e. of Bath; pop. '70, 3200. It has an excellent harbor, and is connected by ferry with Bristol. Ship-building, fishing, and coasting trade employ the inhabitants.

BORBECK, a t. in Prussia on the Ruhr, 4 m. n.w. of Essen; pop. '71, 16,857. It has a castle. Its iron industry is large, and there are coal-mines in the neighborhood.

BORDEN, SIMEON, 1798-1856; b. Mass.; an engineer, self-educated; inventor of an apparatus for measuring base lines in trigonometrical surveys; and superintendent of the state survey of Massachusetts, the first geodetic survey in the United States. He

published *A System of Useful Formula adapted to the Practical Operations of Locating and Constructing Railroads*, and was himself the constructor of several such roads.

BORDENTOWN, a village and township in Burlington co., N. J., 6 m. s.e. of Trenton; pop. '70, 6041. It is on the bank of the Delaware river, and on the Raritan canal, and the Camden and Amboy railroad. Manufacturing is the principal business. Near B. is the former residence of Joseph Bonaparte, brother of Napoleon. The Bordentown college for women is the principal institution of learning.

BORGI, GIOVANNI, 1736-1802; a mechanic of small means in Rome, who was the founder of a ragged school in that city. After his death the school was sustained and enlarged, and especially supported by Pius VII.

BORGIA, LUCREZIA (*ante*), a greatly slandered woman, commonly supposed guilty of the most detestable sins. Modern research has tended to clear her of the charge of incest, so long believed, but of which the proof is entirely lacking. She was a woman of little strength of mind, and doubtless, lacked the disposition to oppose the crimes of her father and her brother Cæsar; but after her marriage with the son of the duke of Ferrara she passed a quiet and prosperous life, and won universal respect by prudence, piety, and patronage of letters and art, dying in 1520.

BORGNE, LAKE, not exactly a lake, but an arm of the gulf of Mexico stretching into s.e. Louisiana, sometimes called Mississippi sound. The Rigolet pass connects it with lake Ponchartrain. It is about 60 m. long by 25 wide.

BORGU, or BARBA; a large district in w. Africa, along the w. side of the Niger and n.e. of Dahomey. The surface is generally level, and the soil fertile and tolerably well cultivated, producing corn, yams, plantains, and limes abundantly. Cattle of good breed are numerous, and there is plenty of game. The people are honest, peaceful, and good-humored. B. is divided into a number of states, of which the smaller are dependent on the Fellatah kingdom of Gondo, while the state of Kitti is ruled by an independent and powerful chief who is sometimes spoken of as sultan of Borgu. The important cities are Wawa and Kiama. B. was the scene of the disastrous fate of Mungo Park, in 1805.

BORIC ACID. See **BORACIC ACID**, *ante*.

BORIS'OV, a t. of Russia, on the Beresina, 44 m. n.e. of Minsk, near the place where Bonaparte's army crossed the river Borisov about the end of Nov., 1812. Pop. '67, 5233.

BORISSOGLIEBSK', a t. in Russia. 11½ m. s.e. from Jamboff, on the left bank of the Vorona, in 51° 22' n., 41° 4' east. B. was founded in 1646 for defense of the frontiers against the incursions of the Crim Tartars. It has an important trade in grain, wool, cattle, and leather, some manufactures, and two annual fairs. Pop. '67, 12,254.

BÖRKU, or BORGU, a country in the interior of Africa, between 17° and 20° n., and 18° and 21° e., forming a part of the great Soudan region. The climate is better than that of the surrounding countries, but the eastern trade-winds blow with great violence from early morning until about 3 p.m., drifting the loose sands into countless heaps, and changing their shape and position from day to day. A great part of the district was not long ago under water. The irrigated lands raise dates in abundance, of a dozen kinds. The northern valleys have a settled population of about 5000, known as the Donosa, or Dosa people; the other inhabitants and traders are nomadic. Dr. Nachtigal spent some time in B. in 1871.

BORN, BERTRAND DE, d. about 1209; a French soldier and troubadour, of a family descended from the dukes of Aquitaine. He had a contest with his brother for the possession of the family heritage, and defeated him; but Richard cœur de lion took the side of the brother because B. had satirized the "lion-hearted" in certain songs. B. then favored Henry II. of England, and took part in the bitter political quarrels of the period. After Richard's death he seems to have led a quiet life; but that his songs had great influence is evident from the fact that Dante put him in the *Inferno* as wickedly inducing the young king to quarrel with his father; and historians refer to the influence of his songs and his deeds of arms as embittering the quarrels of the time.

BORN, IGNATIUS, Baron von; 1742-91; a Transylvanian mineralogist, educated in a Jesuit college; studied law at Prague; traveled in w. Europe, and then went into the department of mines and the mint at Prague in 1770. Against much opposition B. succeeded in substituting amalgamation for smelting and cupellation for extracting silver from the ores in the mines of Hungary. In 1766, Maria Theresa appointed him to arrange the imperial museum at Vienna, and soon afterwards he was made a counselor of state. B. took an active part in the political affairs of Hungary.

BORNA, a t. in Saxony, 16 m. s.s.e. from Leipsic; pop. '71, 5751. Here are ruins of an old castle destroyed by the followers of Huss in 1430.

BÖRNE, LUDWIG; 1786-1837; a German political writer and satirist. He was the son of Jakob Baruch, a Jewish banker, but renounced the Hebrew faith and changed his name to Börne, by which only he is known. He was the editor of various journals which were successively suppressed by the government on account of their extreme

liberalism. The one best remembered is *Der Wage*, in which B. had some powerful and sarcastic dramatic criticisms. His last literary venture was *La Balance*, published in Paris just after the revolution of 1830, in which he mercilessly satirized the German dynasty, which he looked upon as the great opponent of liberalism.

BORNEO, or **BRUNAI**, a seaport in n.w. Borneo, on the Brunai river, 10 m. from the ocean. It is built in the water, the houses standing on piles, and all the streets having canals in them. Pop. about 25,000.

BORSA, a village in Hungary, 50 m. s.e. of Szigeth; pop. '69, 5503. There are mines of gold, lead, and copper in the neighborhood.

BORSIPPA, mentioned by Strabo as a city of Babylonia, sacred to Apollo and Diana, supposed to have been near Babylon. Recent writers have suggested that the mound Birs-Nimrod may be on the site of the old city, but this cannot be held as confirmed.

BORSOD, a co. in Hungary, on the Theiss; 1370 sq.m.; pop. '70, 195,037. The soil is productive, and the co. is famous for wheat and other grain, and for cattle. Grapes are extensively cultivated. There is considerable mining, and plenty of game. Co. seat, Miskolcz.

BORYSTHENES. See **DNIEPER**, *ante*.

BOSC, **LOUIS AUGUSTIN GUILLAUME**, 1759-1828; a French naturalist who visited the United States in 1796 and practically studied American natural history. He traveled in Italy, wrote much on natural history, was professor in the Versailles zoological garden, and member of the academy. He was tutor to Mile. Roland, and adopted her as his daughter, recovering for her the confiscated property of her family. He was the author of a history of the wine district of France, and several well-known works on natural history.

BOSCH-BOK, an antelope of s. Africa, found chiefly in almost impenetrable thickets. It is timid, and easily caught in the open country, and its flesh is much valued. It is from 4 to 5 ft. long, and makes a sound like the barking of a dog.

BOSCH-VARK, a wild hog in s. Africa, nearly the same in form and habits as the domestic hog, but with long pointed ears and a long tail. These animals live in herds, and the boars make dangerous fight with their tusks.

BOSQUE, a co. in n. Texas, on the Brazos, watered by Bosque river; 905 sq.m.; pop. '70, 4981-528 colored. It has an undulating surface, a fertile soil, with forests of oak and cedar. Co. seat, Meridian.

BOSSAGE, a stone in a building left rough and projecting, afterwards to be worked into a decoration. Bossage is applied, in France, to rustic work in which stones advance beyond the general face or level of the structure.

BOSSI, **GIUSEPPE**; 1776-1816; an Italian painter and writer on art. He studied at Milan and at Rome, and was secretary of the Milan academy. When Napoleon was in Milan in 1805, B. exhibited a drawing of Michael Angelo's "Last Judgment," and pictures representing "Aurora and Night," "Oedipus and Creon," and the "Italian Parnassus." B. also made a copy of Leonardo's "Last Supper," the original being then almost obliterated, and from his copy a mosaic was executed by Raphael, and placed in the imperial gallery at Vienna. Another copy, made in oil, was placed in the Brera museum. Much of B.'s life was devoted to the study of the works of Leonardo, and his last work was a series of drawings representing incidents in the life of that master. He left unfinished a large cartoon in black chalk of "The Dead Christ in the Bosom of Mary, with John and the Magdalene." He also published a special volume on Leonardo, and other books on art. There is a monument by Canova to B.'s memory in the Ambrosian library.

BOSSI, **GIUSEPPE CARLO AURELIO**, Baron de, 1758-1823; an Italian diplomatist and poet. When only 18 years old, he published two tragedies, and at 22 became a doctor of laws. He served as secretary of state for foreign affairs, and in a diplomatic capacity in Berlin, St. Petersburg, and Venice. He was envoy to Bonaparte, member of the Sardinian provisional government, and deputy to petition for annexation to France. In 1801, Napoleon made him a baron and prefect of La Manche. Among his poems and lyrics is one entitled "Indipendenza Americana."

BOSSIER, a parish in n.w. Louisiana, on Red river; 800 sq.m.; pop. '70, 12,675-3505 colored; chief productions, corn and cotton. Co. seat, Bellevue.

BOSSU, **RENE**, LE, 1631-80; a French critic. He was professor in different religious houses for twelve years, but thenceforth he devoted his time to authorship. His first publication was on Aristotle's *Physics*. He afterwards wrote a *Treatise on the Epic Poem*, extravagantly praised by Boileau, in which he held that the subject should be chosen before the characters, and the action organized without reference to the persons who are to carry it on.

BOSTON (*ante*), the capital of the commonwealth of Massachusetts and of the county of Suffolk, the largest city in New England, and, of American cities, second only to New

York in the extent of its commerce, is situated on Massachusetts bay, at the mouth of the Charles river, in lat. $42^{\circ} 21' 28''$ n., long. $71^{\circ} 3' 52''$ w. from Greenwich.

The spot was first visited by Europeans in 1621, when a party of pilgrims from Plymouth, on an exploring expedition, entered the harbor and regretted that they had not made their own settlement where the city now stands. At about 1625, William Blaxton or Blackstone, an Episcopal clergyman, established himself on the w. slope of Beacon hill, not far from where Louisburg square is now situated. In 1627, certain men of fortune and religious zeal, merchants and "country gentlemen," in Lincolnshire, England, began to consult regarding planting a colony in New England, to spread the Gospel and advance the glory of God. On Mar. 4, 1629, Charles I. signed a charter constituting a body politic by the name of "The governor and company of the Massachusetts bay in New England." Charles II. at a later date stated that "the principle and foundation of the charter of Massachusetts was the freedom of liberty of conscience." On Aug. 26, in the same year, 12 men of large fortune and extensive cultivation in Cambridge, England, entered into an agreement to emigrate to the new country, provided the place of holding the courts should be removed from London to Massachusetts before the end of the following September. Among the men who joined in this agreement were John Winthrop and Richard Saltonstall. The government was transferred with the patent in Aug., and the commercial corporation became the germ of the present commonwealth. In the spring of 1630, the emigrating party sailed from Southampton in the ship *Arbella*, and entered the harbor of Boston June 17. Winthrop first settled at Charlestown, but subsequently removed to Boston, which received its name Sept. 17 (N.S.). The name was taken from Boston in Lincolnshire (which is a corruption of Botolph's Town), from its patron saint, whose church was founded in the 7th century.

Originally but a small peninsula connected with the mainland by a narrow isthmus called the "Neck;" the city now embraces nearly 23,000 acres, 800 of which were formed by filling in adjacent low lands. The territory has been increased also by the annexation of South Boston (a portion of Dorchester), in 1804; of the island of East Boston, in 1832; of Washington village, in 1856; of Roxbury (Boston Highlands), in 1867; of the remainder of Dorchester, in 1869; and of Charlestown, Brighton and West Roxbury, in 1873. The city contains 350 m. of streets, which have cost, since the incorporation of the city, in 1822, more than \$31,000,000. In the older portions many streets are narrow and crooked; but after the fire of 1872, advantage was taken of this feature to make architectural effects in the new buildings, which are very pleasing, and would have been impossible had the streets been more regularly laid out. After the revolution the names of streets which were reminders of royalty were, in many cases, changed for more republican appellations, though many continue reminders of the old country, both in their names and in their appearance. The city is connected with its suburbs by many bridges, which are noted rather for their convenience than for their elegance, though that leading to South Boston is more pretentious than the others. The Mill-dam, begun in 1818 and completed in 1821, at a cost of \$700,000, is a continuation of Beacon street, and originally inclosed 600 acres of "flats" which were overflowed by the tide. These, having been filled in, constitute the "Back Bay lands," and the district contains some of the most elegant dwellings and churches of the city. In the sleighing season the Mill-dam was formerly the scene of much hilarity and fast driving, but the advance of population has driven the horsemen to the Brighton road, a little further from the center of the town in the same direction. The suburban region lying about Boston is remarkable for the beauty of its varied scenery, as well as for the elegance and taste displayed in the private dwellings with which it is adorned.

Boston has many small parks, and an extensive series of connecting parks has been designed and is in process of formation, but at present the Common and the Public garden, in the heart of the city, are its chief pleasure grounds. The two comprise 70 acres, laid out with care, adorned with lofty elms and sheets of water, and with monuments. The city has, in public places, statues of Charles Sumner, Josiah Quincy, gov. Winthrop, Benjamin Franklin, Edward Everett, Horace Mann, Alexander Hamilton, Daniel Webster, Columbus, Washington, gov. Andrew, and Samuel Adams. Besides these, there is in Park square a group representing the emancipation of slaves, and on the Common another to the memory of the national soldiers who died in the war of the rebellion.

The harbor of Boston is a handsome sheet of water covering 75 sq. miles. It includes many islands, and is well fortified by forts Independence (until 1798 castle William) and Winthrop, opposite each other at the entrance of the main channel, and fort Warren, on George's island, lower down the harbor, opposite the end of Nantasket or Hull. Three light-houses mark the entrance to the harbor. Boston light is situated nearly two m. e. of fort Warren, and shows a revolving light 92 ft. above the level of the sea. The Spit, or Bug light, exhibits a fixed red light, about 35 ft. above the level of the sea. It stands upon iron pillars fixed in the rock, and can be seen at a distance of about seven miles. Long Island light, named from the island on which it stands, is a tower 22 ft. above the ground, but 80 ft. above the sea. A strong battery is now in process of erection on Long Island.

The executive power of Boston is vested in the mayor and 12 aldermen; and the legislative functions are performed by the mayor, aldermen, and 72 councilmen, all of whom

are elected annually on the Tuesday after the second Monday in Dec. A fire commission, composed of three members, controls the fire department, which is admirably managed. Three commissioners also control the police department. The system of telegraphic fire-alarms was first introduced into Boston in 1851. The streets are kept clean, and the house offal is removed under the care of the superintendent of health. The house of reformation, the house of industry, and the alms-houses are situated on Deer and Rainsford islands, in the harbor, and are managed by the directors for public institutions. The house of correction and the lunatic asylum, under the control of the same body, are at South Boston. The city was supplied with water as early as 1795 from Jamaica pond, but the elevation was not sufficient to bring the supply to the higher portions of the city. In 1848, the Cochituate water-works were completed, and in 1872 the legislature passed an act permitting the city to take water also from Sudbury river. The latter works are now completed. Charlestown district is supplied from the Mystic water-works, which take water from Mystic lake in Medford.

Boston has many public buildings worthy of notice. Among those that are remarkable for architectural beauty or grandeur are the United States postoffice, on Postoffice square, Trinity church, the museum of fine arts, the hotel Vendôme, the cathedral of the Holy Cross, the state house, the English high and Latin school on Warren avenue, and the new "Old South church." The English high and Latin school was begun in 1877, and the portion to be used for school purposes is just completed, at a cost of more than \$400,000. The remainder, which is to be used by the officers of the school-board, is to be added at a future time. The entire edifice will be one of the largest for educational purposes in America, or in the world.

Among the buildings remarkable rather for their historical interest than for architectural beauty is Christ church, on Salem street, the oldest church in the city, and the one from the steeple of which, in the revolutionary war, Paul Revere's signal was hung out by capt. John Pulling, merchant, of Boston. The Rev. Mather Byles, jr., was rector of this church during the revolution, and left town on account of his sympathy with the royal cause. The old South church, built in 1730, is one of the most noted in the country. It was abandoned as a church in 1876, and since that time efforts have been made to purchase it as a monument commemorating the times that tried men's souls. In this building Joseph Warren delivered his memorable oration on the anniversary of the "Boston massacre," Mar. 5th, 1776. Here the patriots met to discuss the tax on tea. In 1775, the building was "desecrated" by British soldiers, who tore out its galleries, filled it with earth and used it as a place for cavalry drill. From 1712 to 1872, the annual "election sermon" was delivered in the old South church. It is now used as a historical museum. The most famous of the relics of the olden time is Faneuil hall, well known as the "cradle of liberty," from the fact that during the period preceding the revolution, it was used for public gatherings at which the patriotic spirit of the colonists was stirred by the eloquence of the popular favorites.

The original edifice was built as a market, and presented to the town by Mr. Peter Faneuil, in 1742. It was destroyed by fire in 1761 and rebuilt the following year. Before the adoption of the city charter in 1822, all town-meetings were held in Faneuil hall. The hall is 76 ft. square, and 28 ft. high, and possesses remarkable acoustic properties. Valuable paintings adorn its walls. A market is under the hall.

The "old state-house" stands at the head of State street. The town-house was built on the spot in 1763. The "Boston massacre" occurred in the street before it, and there the stamped clearances were burned by the mob, during the excitement caused by the stamp act. Independence was born in the building, according to gov. Adams, and from the balcony the declaration of independence was read. It was here that those town-meetings were held at which Otis uttered his prophetic and patriotic words, counseling peace, but foretelling probable war, and urging resistance to tyranny, "even unto blood," if necessary.

From the first, Boston has been noted for its commerce. Eight lines of railways connect it with the interior, and ships and steamers sail from the capacious harbor to all parts of the world. Large quantities of fish, ice, and manufactured products are exported. The ice trade was begun here by Frederic Tudor, who, in 1866, made the first shipment to Martinique. It is said that but for the trade in ice, the business between Calcutta and Boston would never have reached its present proportions. Boston is now the second city in the union for foreign commerce; it is a center of the boot and shoe trade, the leather trade, and of the trade in foreign and domestic dry goods. The manufactures of the city are many and varied, including—besides ship-building, sugar refining, and leather dressing—clothing, jewelry, chemicals, brass and iron castings, and books. The business of the city is promoted by sixty-one national banks—more than any other city in the union has—with a capital of more than fifty-three million dollars. Thirty of these have cash capitals of one million or more each. The surplus funds of the inhabitants are, in part at least, deposited in sixteen savings banks, the first of which, the Provident institution, was founded in 1816, and has larger deposits than almost any other institution of the kind in the country. These banks are strictly guarded by laws which restrict the amount that can be deposited by any one person and otherwise protect their solvency.

From the earliest days Boston has been noted for the care with which it provided for

the religious wants of the people, for their education and for the distribution of literature. The first "meeting house" was erected near the head of State street, 1632. John Cotton was one of its pastors. The city contains now nearly 200 churches. Of these the larger numbers belong to the Congregationalists (evangelical), the Unitarians, Baptists, Methodists, Roman Catholics, and Episcopalians, in the order mentioned. Free schools, open to all, were established in the United States first in Boston 250 years ago, and the excellence of the system of public instruction there has been so great that many other cities have taken its schools for patterns. The university at Cambridge properly belongs to the Boston school system, for it was founded by the men who settled Boston and was intended for the education of the youth of the city and surrounding country. Indeed, "Newe Town," as Cambridge was first called, was intended for the capital of the commonwealth. It was John Winthrop who directed attention to the superior advantages of the neighboring promontory, after fortifications had been commenced at the former place. Harvard college was founded in 1638, and for two generations was the only college in New England. The public Latin school in Boston was founded in 1635, the institute of technology in 1861, Boston college in 1863, Boston university in 1869. There are more than 200 public schools in the city. Nine of them are high schools, 49 are grammar schools, and one is a normal school. The salaries of the teachers amount to about one and a quarter million dollars a year. Private schools abound, and their reputation is high. Chauncy Hall school, established 1828, is one of the most prominent of these. It occupies a building on Boylston street, near the institute of technology. In regard to the number and extent of its public libraries, Boston stands at the head of American cities. The chief libraries are the Public, with 360,000 volumes, distributing 1,250,000 volumes a year; the Athenæum, 115,000 volumes, circulating 50,000 volumes a year; the Historical society's library, containing 68,000 books and pamphlets, many of them being among the rarest of publications; the state library, with 40,000 volumes; the Social law library, with 15,000 law books; the library of the Historic-genealogical society, 74,000 books and pamphlets; the General theological library, with 13,000 volumes; the library of the Natural history society, containing 17,000 books and pamphlets; the Congregational library, with more than 100,000 books and pamphlets, illustrating the history of the religious denomination to which many of the early settlers of New England belonged. Boston has musical societies, art associations and social clubs. Among the clubs the most prominent are the Somerset, the Union, St. Botolph, the Papyrus, the Saturday, and the Woman's club. Several of these have well-appointed buildings. The clergy have meetings at stated times for the discussion of topics related to their calling. Boston is well supplied with hospitals and societies for the aid of the indigent and suffering. In 1876, a plan for the registration of the worthy poor was set in operation, for the purpose of discriminating between the worthy and unworthy and for greater economy in the distribution of relief.

The city is well supplied with theaters, and is said to be one of the best in the country for the appreciation of good actors and singers. Also, there are many halls in which lectures are given from time to time on almost every topic that interests the human mind.

The 250th anniversary of the settlement of Boston was celebrated Sept. 17, 1880, with great enthusiasm. For 192 years Boston was a town, the city charter having been accepted as late as 1822, after the subject of the change had been discussed for 170 years. The population for the first two centuries did not rapidly increase, being about 7000 in 1700; 15,520, in 1764; 18,038, in 1790; 61,392, in 1830; 250,526, in 1870; 341,919, in 1875; and 363,968, in 1880. Much of the late gain has arisen, of course, from the annexation of adjoining territory. In early days—at least as early as 1634—the town was governed by "selectmen," but when such officers had first been chosen is not now known. The first grand jury of the country met in Boston, Sept. 1, 1635. The church in Boston was vexed in early times by Roger Williams, Mrs. Anne Hutchinson, the Quakers, by women possessed by witches, and by Episcopalians; and rigid laws were enacted to bring the offenders to give up their peculiar views or leave the town. Boston sympathized with Goffe and Whalley, the regicides, who appeared in the town in 1666; in 1688, the inhabitants rose against the government and overthrew it: the city bore its share of the burden of the "old French war;" and its inhabitants entered with patriotic zeal into the struggle for independence. In the late war Boston was prompt to offer soldiers and money for the purposes of the general government, and her officers and men made a record of which they and their fellow-citizens have always been proud.

BOSTON, PUBLIC LATIN SCHOOL IN, founded 1635, is designed to give a thorough general culture to boys who intend to pursue the higher branches of learning, or to prepare for professional life. It is organized in six classes, and the full course of study covers the period of six years. Graduates of grammar schools, to whom diplomas have been awarded, are admitted without examination to whatever class their qualifications may entitle them to enter. Other applicants have to pass an examination equivalent to that required for admission to the third class of the grammar school. The standard of graduation is that of admission to colleges of the highest grade. The early records of the school are imperfect, but the catalogue printed in 1847 contains about 5000 names, and among them are many of those eminent in the history of the country. Adding those who have attended the school since that date, we have a total of about 7500. The whole

number of graduates is reckoned at about 3400. It is believed that at least 3000 of its pupils are now living. It has now 13 teachers, and 400 pupils, and a library of about 3000 volumes, mostly classical. Prizes are offered annually for superior proficiency in various studies, and for exemplary conduct. The school was once on School street, on the site of the Franklin statue, in the rear of King's chapel; afterwards on the opposite side of the same street at the corner of the alley, on the site of the Parker House; at present on Bedford street. It will soon be removed to a new and elegant building on Warren avenue. The master of the school at present is Moses Merrill. Among the former masters were Philemon Pormot (first master), Ezekiel Cheever, Benjamin A. Gould, Charles K. Dillaway, Epes S. Dixwell, and Francis Gardner.

BOSTON UNIVERSITY, Boston, Mass., incorporated in 1869, was founded by Isaac Rich, Lee Claflin, and Jacob Sleeper. Its president since its foundation is William F. Warren, S.T.D., LL.D. The chief organs of its administration are: 1, the university corporation; 2, the university council; 3, the university senate; 4, the university convocation; 5, the faculties of the colleges; and 6, the faculties of the schools. The first consists of the president of the university and five classes of trustees, each holding office for five years; the second of the president and registrar of the university and the deans of all the faculties; the third includes all members of the council and all regular professors in the different faculties; the fourth consists, under certain statutory limitations, of all who have been admitted to degrees in the university. Departments, so organized as to presuppose on the part of the students a collegiate education or its equivalent, are called schools. Some of these, organized and administered in the interests of persons preparing for professional life, are called professional schools. Crowning all is the school of all sciences, a purely post-graduate department for candidates for the higher degrees. There are the following departments: college of liberal arts, established 1873; college of music, 1872; college of agriculture (Mass. agricultural college, at Amherst), 1875; school of theology, 1871; school of laws, 1872; school of medicine, 1873; school of all sciences, 1874. The college of liberal arts has fixed a standard for admission to classical degrees as high as that of any other university. Post-graduate students in the university may fit themselves for professorships of Greek, Latin, modern languages, philosophy, history, etc. By arrangements with the authorities of the national university at Athens, and those of the royal university of Rome, members of the school of all sciences, duly recommended, may pursue, without expense for instruction and for any number of years, select or regular courses of study in any department of those universities, enjoying all the rights and privileges of university citizenship, and, upon returning and passing satisfactory examinations upon the work accomplished, can receive a degree as if they had remained in Boston. The greater part of the endowment of the institution was bequeathed by the late Isaac Rich, a member of the Methodist Episcopal church. As it is not to pass into the hands of the university corporation till 1882, its amount cannot yet be stated. The average number of officers of instruction and government during the past four years has been 100; the average number of students over 600. The institution maintains graded courses of instruction in theology, law, and medicine, three years in duration. In medicine its course extends through four years, while the degree of bachelor of medicine has been restored. The university was organized and has been constantly administered without any discrimination in government or teaching on account of sex. Every degree, privilege, and emolument is as open to women as to men. This institution does not gather its students into dormitories or exercise any supervision over them except in the recitation rooms.

BOSTON, a game at cards, played by four persons with two packs, one being dealt and the other cut to determine the trump. Five cards to each are dealt twice around and then three to each. If the first player can take five tricks he says "I go Boston," when the others may overbid by saying "I go 6," 7, 8, and so on. Should any player fail to make as many tricks as he said he could take, he pays such forfeit as may have been regulated before playing.

BOSTRA. See **BOZRAH**.

BOTALI, LEONARDO, b. 1530, in Piedmont; physician to the queen of Charles IX. and to Catherine de Medici. He was the author of several medical works, but is best known by his blunder in describing the foramen ovale between the right and left auricles of the heart, still known as the "foramen of Botal." He found this open in a grown person—an exceptional case, since it is usually closed at or soon after birth; but he took the exceptional for the natural condition, and described it as an opening for passing arterial blood into the left auricle.

BOTANIC GARDEN (*ante*) of Harvard university was founded in 1805, in March: William Dandridge Peck was chosen professor. He began to lay out the garden, but the next year went to Europe to examine similar institutions. There was a scarcity of money, and the garden languished for years. It was in charge (about 1822) of Thomas Nuttall, an English botanist, who, in 1833, suddenly deserted his post to make a tour across the continent and to the Sandwich islands. In 1842, Dr. Asa Gray was appointed Fisher professor of natural history, on the endowment given by Dr. Fisher of Beverly. In 1848, a study was built for a herbarium, and used for botanical instructions. In 1857

a new and larger conservatory was built. In 1864, the herbarium was erected, the gift of Nathaniel Thayer. After much exertion, the establishment was practically completed in 1871 by the fitting up of a lecture-room and laboratory, and an extension of the conservatory, thus connecting the herbarium on one side and the conservatory on the other into a continuous range, and affording the means of giving the whole botanical instruction throughout the year at the garden, in connection with the materials and collections which illustrated it. A fine botanic garden is connected with the department of agriculture at Washington, and there are others more or less important in various parts of the country.

At Buitenzorg, in the island of Java, near the foot of Mt. Salak, are botanic gardens which have been called the finest in the world. Here one can wander for hours through avenues of every kind of tropical palm. The orchids are a splendid collection, containing specimens of nearly every known kind of *lælia*, *dendrobium*, *cria*, *bolbophyllum*, *cyrtipedium*, and a host of others.

There are huge beds of ferns: plantations of gigantic yucca and pandanus, interspersed with dracene and eucharis; a forest of tree ferns, many of them upward of 30 ft. high; with bamboo avenues, and nearly every palm. Among them grow enormous creepers, one of which winds in circles about the ground, and then goes over a palm-tree and down again, upward of 300 ft. long; 70 yards alone are on the ground.

BOTANY, FOSSIL, a study almost unknown until the beginning of the 19th c., but now of much importance in connection with palæontology. Besides the usual classification of plants there is generally recognized a sixth class called protophytes, which embrace microscopic cryptogamous plants. These are diatoms and desmids. In botany, as in the animal kingdom, the simplest forms are reckoned the lowest; and, as in the history of animal life, we find that the lower forms of plants appeared first. This is proved by the fact that such forms are found in the oldest fossiliferous strata, the higher groups appearing only in later formations, the present flora being the most highly organized of any. It is known that plants preceded animals, for animals depend upon plants for food, while plants had power to assimilate inorganic substances. With regard to fossil specimens it must be remembered that as the continents came up out of the sea, and as all fossiliferous strata were deposited under water, therefore aquatic plants and animals were more likely to be preserved than animals and plants of the higher lands. In later geological ages the plants have been for the most part terrestrial, while the animals have been in far greater proportion aquatic. Animals also, oftener than plants, have some imperishable portions, and so the specimens of extinct animals are more nearly complete than are those of plants. Remains of marine fossil animals are found in the drift deposited by the sea in successive invasions of the land; and such invasions have been followed by periods of immense duration in which the sea was far away from the invaded land. Within these indefinite periods no record was made, unless in the deep water of the sea or on the shores of other lands invaded during the interim. Therefore for any single country the records of marine life exist in a series of sections separated from each other by blanks covering enormous periods of time. The relations of extinct animals are, consequently, necessarily obscure. But the succession of land plants may have been unbroken, or nearly so; in any event, it is much nearer perfection than in the case of marine animals. It is therefore conceded that the records of plant life found in the sea-shore deposits and the lake beds of the earth will throw much light on the questions of evolution and the origin of species. An idea of the present state of knowledge in respect to fossil botany may be gathered from the following statement of some of the discoveries and deductions thus far made.

The protophytes are identified only with the recent deposits. Their absence from the Palæozoic rocks may be explained by the fact that only such as secreted calcareous or silicious crusts or shells could under ordinary circumstances be preserved. The shields of diatoms are more easily soluble than most forms of silica, and perhaps some of the older beds of flint received their material from this source. Some of the small plants which secrete lime and are commonly called algæ might be considered protophytes. These are and have been abundant in our seas, and may have contributed to the formation of the beds of fossiliferous limestone which make up so much of the Palæozoic rocks. There are tertiary deposits made up of the shields of the diatoms at Monterey, Cal., and near Richmond, Va. The desmids, which are non-silicious, are often found in flint of the cretaceous age, but diatoms under similar circumstances are rare.

The algæ (*hydrophyta*, or *thallogens*) abound in all the oceans and seas, and are discovered in all strata from the lower Silurian upwards. But in the lower Silurian the only plants certainly traced are sea-weeds. Plants found in the Cambrian rocks are described as of the genus *cophyton*. In the Trenton limestone are several species of algæ. Sea-weeds are common in the upper Silurian, the most important being a fossil of the Medina sandstone. In the same strata is the genus of fucoids called *spirophyton*, which runs through the Devonian and carboniferous systems, and is called the "cock's-tail fucoid." In the upper Devonian and lower carboniferous strata is found a group of singular formation called *dictophyton*, and another equally remarkable, called *uphan-*

tanina. In later formations algæ become numerous and gradually approach the forms of the present age. About 50 genera and 150 species have been described.

Lichens, which are so abundant now, are scarcely known in a fossil condition. But as they are exclusively terrestrial plants, they were less likely to be fossilized than the aquatic *thallogens*. It is considered that the lichens were much less abundant in the carboniferous age than now. The only known fossil species were found in amber and in the tertiary lignites. Those in amber are of the same genera and for the most part of the same species with the lichens now common in America and Europe.

Probably because they are terrestrial, and most of them soft and easily perishable, fungi are almost as rare as lichens in the fossil strata. A considerable number of fungi have been described. They are almost all from the tertiary; but some species have been found in the coal-beds of Saxony, and a few have been found in amber. It is believed that some species described are not fungi, but shells, or fish scales.

Plants of the group *anogens*, including *hepaticæ* and the mosses, now form a large part of our vegetation. With an expanse of development as wide as the earth, and in such vast abundance everywhere, it seems strange that no trace of *anogens* has been found in the older geological formations. But in the tertiary formation both mosses and liverworts are found in considerable abundance, particularly in amber and lignites, and to the formation of the latter they appear to have contributed. Those preserved in amber served to show that nearly the same species are now growing in various parts of Europe. It is believed that the liverwort known as *marchantia palydrosphia* is the most widely distributed of living plants. The absence of *anogens* in the ancient flora shows that those plants, though low in the scale of plant life, are of quite modern date.

There appears to be some reason to believe that the *acrogens* (ferns, equiseta, and lycopods) were the first forms of land vegetation on the earth. They are still represented, but are nowhere predominant, and in general they are insignificant among local living forms. They were formerly much more important, but hundreds of species have died out. Of the three orders united in this class, the lycopods seems to have been the earliest in point of time, and earliest in their subsequent development. They are now represented by various species of lycopodium, or ground-pine, most of which are small. The first lycopods are found in the upper Silurian rocks of Canada, England, etc. These were the forerunners of the large scaly-trunked trees of the carboniferous flora, in which flora they exceeded all other forms of vegetation. At the close of the palæozoic age the lycopods seem to have almost disappeared. No specimen of the group has been found in the mesozoic or tertiary rocks. The ferns made their first appearance in the Devonian strata, and acquired greater importance than they have at the present time. In the middle and upper Devonian tree-ferns were numerous, and of greater dimension than any now living. Of the forms of the upper Devonian and carboniferous strata several hundred species have been described, and there are reasons to believe that they formed a much more highly organized, diversified, and beautiful group of plants than can be found in the fern-flora of to-day. In the mesozoic and tertiary rocks remains of ferns have been found; but ferns reached their highest development in the carboniferous period. The equiseta, which now exist only in the form of scouring rushes, in the carboniferous and Devonian ages grew nearly to the size of forest trees, and in numbers were among the most important of the flora. In the mesozoic ages species of this genus existed, having trunks 6 in. in diameter. In the tertiary age the equiseta were larger than now, but were an unimportant portion of the flora of the time. The order of *acrogens* show a history in contrast with that of other cryptogami. They began very early in the earth's history, acquired a profuse development, and kept their standing through two geological ages. Then that standing was suddenly lost, and thenceforward their course has been downward, until from lordly trees they have degenerated to rushes, and lost all importance in botanical rank and in scientific consideration.

Quite the opposite are the facts in regard to the great group of *endogens*, among which are the grasses, palms, lilies, etc., including many of the loveliest forms of vegetable life. They include also the grains commonly called cereals, and are thus not only ornamental, but highly useful. They are of comparatively modern date. Few traces of them have been found in palæozoic rocks, but they seem to have existed at least as flowering plants in the carboniferous age. In the triassic, jurassic, and cretaceous formations they are represented by many genera. Palms appear in the cretaceous formation, the oldest representative being the fan-palm now growing in the southern United States. In the tertiary era this flora rose to great importance, and remnants are found of many species of grasses, sedges, and lilies. It appears, therefore, that the *endogens* are of quite modern date, beginning in the mesozoic era, the inferior families coming in at a later period.

The *exogens*, now forming much the larger part of the vegetation of the globe, belong to the present or to the immediately preceding geological era. No actual traces of angiosperms, the highest division of the *exogens*, have been found further back than the cretaceous rocks. Commencing in that era, they spread with great rapidity, developed in remarkable force and variety, and before the close of the epoch they had become the predominating type of vegetation, which gave the flora of the earth very nearly its

present appearance. In the tertiary epoch many additions were made, comprising the most beautiful and useful of flowers and fruits, producing plants useful in supplying the animals then coming to development, and finally for supplying man. There is quite a different history for the inferior order of exogens, the gymnosperms, the conifers, and the cycads. The conifers seem to have been among the first of terrestrial plants, beginning far back in later epochs of the upper Silurian age. In the Devonian they attained large size, as the petrified trunks found in middle Devonian rocks have proved. In the carboniferous age, conifers were abundant, producing forests much like the pine forests of the present day. In the tertiary age, the conifers reached their highest development in the "mammoth trees," the "red wood," etc., of which remarkable specimens are still to be seen in California. The pines and firs began in the cretaceous age, and have since been increasing in importance, at present constituting by far the larger part of the coniferous vegetation of the globe. Yews appeared in the tertiary period, *podocarpus* in the mesozoic, *larix* in the tertiary, *arbor vitae* in the mesozoic, *taxodium* in the middle tertiary, the ghinko (which has now but a single representative) in the cretaceous. The cycads appeared in the carboniferous age, and in the mesozoic age became one of the most characteristic forms of vegetation. Then they displaced and succeeded the acrogens of the coal-floras, and gave their name to the "age of cycads," extending from the beginning of the triassic to the middle of the cretaceous age. They were in turn displaced by the conifers. In the tertiary age the cycads filled about the same position as now.

Of the angiosperms much will be found under the title BOTANY (see *ante*). Their history comprises the larger part of modern botany. They appear in vast numbers quite abruptly in the upper part of the cretaceous formation. Many of the genera now living formed the forests of that period, and the fossil remains show that their appearance was much the same as now. Among the living genera represented were the oak, poplar, plane, willow, beech, sassafras, magnolia, fig, maple, walnut, tulip tree, etc. The tulip-tree has but a single living representative, yet the genus began in the cretaceous age, in America; and in the miocene tertiary age a tree nearly like it grew in Greenland, Iceland, and in Europe down to Italy. The sassafras, having now but one species in America and one in the East Indies, dates back to the cretaceous age, and was the companion of the tulip-tree in Greenland and elsewhere. Magnolias, so grand a feature of American forests, were common in Europe during the tertiary period, but none are native there now. The fast-disappearing specimens, with the lone remnants of gigantic growth of the Yosemite, remind us of the magnificent arborescent flora of the American continent in ages long gone by.

It is not easy to define *ages* in botany otherwise than by ages in geology. No trace of plants has been found in eozyic rocks. These rocks, however, contain no animal fossils, and it is supposed that if there had been deposits of either vegetable or animal matter, the metamorphism of the rocks is so absolute that no traces would be likely to remain. But beds of graphite found in the Laurentian rock-beds are by some scientists considered to indicate a vegetable origin; and one writer suggests that they may be of animal origin. Fucoids are said to have been found in the Cambrian rocks in England; and in the same rock in Sweden, and certain rocks in Wales, plant remains described as exogens have been found. Their character, however, is doubtful, and affords no real proof of development higher than that of sea-weeds. Fucoids are abundant in the lower Silurian, but usually with little or no trace of structure. There seems to be no satisfactory evidence of the deposit of land plants in the lower Silurian strata. Coming to the upper Silurian, we find the greater part of the plants to be sea-weeds. But here and there discoveries and indications tend to show the existence of land plants at about the end of the Silurian age. In the Devonian rocks fucoids are common. Tree-ferns have been found in the carboniferous limestone of Ohio, indicating the existence of a highly organized flora on the land. In New York, Canada, and elsewhere, remains of an abundant flora have been found in the middle and upper Devonian rocks. The remarkable feature of Devonian flora is the prevalence of conifers and tree-ferns. The vegetation of the carboniferous age (age of coal) is important, but has been often described. More than 500 specimens of plants or parts of plants have been described. Much the greater portion consists of ferns, but few of them were arborescent. Next come the lycopods, then the equisetæ. Of the latter group some were arborescent, and some were aquatic. The cycads, also, were represented; and the endogens, the latter by a few flowering plants. Conifers growing to the size of modern pines were abundant, but they were highland trees, and not likely to be found in coal deposits. Many fossil fruits have been found with the coal plants, such as nuts of conifers and seed-vessels of cycads.

Coming to the triassic flora of the mesozoic age there is a radical change, both with regard to flora and fauna. Ferns were numerous, but different from those found in the coal-beds, and less plentiful. The cycads are the prominent feature of triassic vegetation, they were so numerous and conspicuous as to give rise to the title "reign of the cycads." This branch of fossil botany has not been much studied in America, but some valuable collections have been made. The most remarkable of American plants of this period are cycads, and great monophyllous ferns. In some places petrified trunks of coniferous trees are abundant, proving that forests of very large trees covered some portions of the continent at that period. But so far no traces of angiosperms have been

found among triassic plants, nor have any Jurassic plants, so common in Europe, been discovered in this country.

The cydaceous flora appears to have remained with no particular change during the early part of the cretaceous era. About the commencement of the lower cretaceous strata, however, the "reign of angiosperms" began, and in the cretaceous sandstones of New Jersey and of the west the remains of 100 species of arborescent angiosperms have been found, with few ferns and hardly any cycads among them. The facts show that the continent was covered with forests of broad-leaved trees, rivaling in size and beauty those of the present time; that among those old trees were oaks, magnolias, sycamores, willows, beeches, and others now common. The upper cretaceous deposits of Colorado and other territories contain beds of lignite, and many foreign plants. About 250 specimens, of which many are single leaves, have been found. The coal strata of Vancouver's island contain many signs of the leaves of angiosperms.

In the tertiary age, the angiosperms predominate, and the indications are that the flora was derived directly from that of the cretaceous era, the tertiary flora in turn giving birth to that of the present day. No traces have been found in this country of the flora of Europe of the eocene period. During the miocene period, fan-palms grew as far north as Canada, indicating that the region of the St. Lawrence then had a climate as warm as that of the gulf states at the present time. In the miocene tertiary period, the part of the continent now known as British America and Alaska was covered with luxuriant vegetation, even to the shores of the Arctic ocean. In Greenland and Alaska many specimens of arborescent plants have been found. The similarity of many of these species to those found in Europe lead to the presumption of a land connection between the two continents; and the similarity of the flora of Japan with that of America would seem to indicate a land connection on that side also. The pliocene flora of America presents no very marked changes from that of the miocene, except in approaching more nearly to the flora of the present time. In the glacial era, the tertiary flora was forced southward, or destroyed. After the modification of temperature, the boreal plants, which in the ice period had covered the lowlands, moved northward or climbed the hills and mountains to find a natural temperature. The kindred character of alpine species in often widely separated places shows this fact.

After the manner of the geologists, the learned in fossil botany may divide the ancient flora into "ages," of which there are four: 1. The *age of thallogens*, including the Cambrian and Silurian divisions of geology, during which time sea-weeds were almost the only form of plants. 2. The *age of acrogens*, in the Devonian and carboniferous eras of geology, when ferns, etc., attained their wonderful development in size and number. 3. The *age of gymnosperms*, from the beginning of the triassic to the middle of the cretaceous era, when the cycads and conifers were over all the earth, and of greater relative importance than at any time before or since. 4. The *age of angiosperms*, from the middle of the cretaceous to the present time, of course including all existing flora. See PALÆONTOLOGY, *ante*.

BOTETOURT, a co. in s.w. Virginia, on the James river; intersected by the Atlantic, Ohio and Mississippi railroad; 500 sq.m.; pop. '70, 11,329—3163 colored; in '80, 15,750; the Blue ridge is its s.e. boundary; Middle mountain is on the n.w. border, and the Peaks of Otter are on the Bedford co. line. Cereals and tobacco are the chief productions. Co. seat, Fincastle.

BOTETOURT, SIR NORBORNE BERKELEY, Lord, 1717-70: an English statesman, governor of the colony of Virginia in 1768, dying there two years later. He favored the colonists and opposed parliamentary taxation. He was the last of the barons of Botetourt.

BOTHWELL, a co. in Ontario, Canada, on lake Erie and St. Clair river; traversed by the Great Western railway; 547 sq.m.; pop. '71, 20,701. Petroleum is one of the chief productions.

BOTOCU'DOES, or **AYMBORES**, a Brazilian people on the Rio Doce and Rio Parde, who are said to resemble Chinese. There are about 4000 of them; brave but treacherous, and troublesome to the government. They have the hideous custom of wearing a block of wood in the lower lip, forcing the lip to project 2 or 3 in. in a right angle to the jaw; they also wear great wooden ornaments in their ears. All the B., except a few who are civilized, go naked.

BOTOSHAN', or **BOOTUSHA'NI**, a city in Roumania, 60 m. n.w. of Jassy; pop. '66, 28,117. It contains a hospital and many churches and synagogues, and is the seat of an important fair.

BO TREE, **PEEPUL**, the sacred fig-tree of Ceylon and Hindustan, greatly venerated by Buddhists. It bears a small fig of little value, but its sap is rich in caoutchouc. The tree is a favorite haunt of the lac insect, and a great quantity of lac coloring matter is gathered from the branches. There is a B.T. in Ceylon which it is supposed was planted nearly three centuries before our era.

BOTTA, **VINCENZO**, PH.D., b. 1818, in Piedmont; professor of philosophy in Turin, and in 1849 a member of the Sardinian parliament. He came to the United States several years ago, and became professor of the Italian language and literature in New York

university. He is the author of *The American Question, Discourse on the Life of Count Cavour, Dante as a Philosopher, Patriot, and Statesman*, etc.

BOTTICELLI, SANDRO (for ALESSANDRO), b. 1447; a Florentine painter, called one of the most original and fascinating of that school. He was the son of Mariano Filipepi, but took the name B. from a goldsmith with whom he served when a boy. From the goldsmith he went to study under the painter Lippo Lippi, after whose death he worked independently. All of B.'s creations are colored with an expression of eager and wistful melancholy, of which it is hard to penetrate the sense, and impossible to escape the spell. He was an artist of immense invention and great industry. In color B. was rich and fanciful, often using gold to enrich the lights on hair, tissues, and foliage, with exquisite effect, and no one ever painted flowers with more inspired affection. The date of his death is unknown.

BOTTLE-NOSE WHALE, or **BOTTLEHEAD**, *Hyperoodon bidens*, a cetaceous inhabitant of the n. Atlantic, sometimes seen in deep rivers. It is seldom as much as 20 ft. long. The name is sometimes given to a species of dolphin, *delphinus tursis*, inhabiting the same seas.

BOTTLE TREE, *Sterculia rupestris*, a native of Australia, noted for great globular expansion between the ground and the branches; or, where the soil is without rocks, for a trunk in the shape of an ordinary bottle, the limbs appearing to grow from the mouth.

BOTTOM HEAT, an artificial temperature in certain soils arising from the fermentation or decomposition of manure, tan bark, leaves, etc., buried for the purpose, and sometimes heated by hot-water pipes. The system is much used in hot-houses and for forcing the growth of tender plants.

BOTTOMRY (*ante*), a term in maritime law. The act of congress (July 29, 1850) declares bills of sale, mortgages, hypothecations, and conveyances of vessels invalid against persons—other than the grantor or mortgager, his heirs and devisees—not having actual notice thereof, unless recorded in the office of the collector of the customs where such vessel is registered or enrolled, and expressly provides that the lien by bottomry on any vessel, created during her voyage by loan of money or materials necessary to repair or enable such vessel to prosecute a voyage, shall not lose priority, or be in any way affected by the provision of that act. Seamen have a lien prior to that of the holder of a bottomry bond for their wages in the voyage in which the bottomry was incurred, or in any subsequent voyage; and the owners are also personally liable for seamen's wages. If the holder of the bottomry bond is compelled to satisfy the seamen's lien, he has a right to compensation from the owners, and it has been held that he has a lien upon the proceeds of the ship for his reimbursement.

BOTTS, JOHN MINOR, 1802-'69; b. Va.; lawyer and politician, elected to the Virginia legislature in 1844, and several times thereafter; in 1839, chosen to Congress, where, with Henry Clay, he supported the tariff, the distribution of public lands, etc. When president Tyler left the party that elected him, B. left him, although a long-time personal friend. He opposed secession, and was faithful to the union throughout the rebellion. When that ended he became one of Jefferson Davis's bail. He published *The Great Rebellion; its Secret History*.

BOUCHER, JONATHAN, 1738-1804; an English clergyman who came to Virginia as a private teacher, afterwards took orders and was a rector in Maryland just before the revolution; his loyalism induced him to return to England, where he became vicar of Epsom. He published *A View of the Causes and Consequences of the American Revolution*, dedicated to Washington; and a *Glossary of Archaic and Provincial Words*.

BOUCHER, PIERRE, (SIEUR DE BOUCHERVILLE), b. France, 1622, d. Canada, 1717; a pioneer and Huron interpreter who came to America in 1635 and was engaged in the wars with the Iroquois. He was sent by the colony as deputy to France in 1661, about which time he published a *History of New France*. He was ennobled and appointed governor of Three Rivers. He was a brave and good man, the ancestor of some of the most important families in Canada. Shortly before his death he addressed to his children *The Adieus of Grandfather Boucher*.

BOUCHER DE CREVECŒUR PERTHES, JACQUES, 1788-1868; a French archaeologist and writer who was employed by Napoleon on several diplomatic errands. He was the author of a comedy, several tragedies, articles in favor of free trade, etc., and was president of the society of emulation at Abbeville. He collected Roman and Celtic antiquities, presenting them to the government, and gained much celebrity by archaeological discoveries and by his work *On the Creation*. He wrote also on primitive industries and arts, on antediluvian antiquities and stone implements, besides various works of the imagination.

BOUDINOT, ELIAS, LL.D., 1740-1821; a descendant of the French Huguenots; b. Philadelphia. He practiced law, and was an early advocate of colonial liberty. In 1777, congress made him commissary-general of the prisoners, and in the same year he was chosen a member of congress, becoming president thereof in 1782, and signing the treaty of peace the next year in his official capacity. Washington made him superintendent of the mint in 1796, but he resigned in 1805 and retired from public life. He

was a trustee of Princeton college, to which he gave a cabinet of natural history. In 1812, he was a member of the American Board of commissioners for foreign missions, and in 1816 first president of the American Bible society, to both of which he gave large donations. B. was one of the first writers to favor the idea that the American Indians were of Jewish origin, to which end he published *The Star of the West, or an Effort to Discover the Lost Tribes of Israel*. He published the *Age of Revolution, or the Age of Reason an Age of Infidelity*, and other less important works.

BOUGHTON, GEORGE H., b. England, 1836, came to the United States when three years old, and spent his early years in Albany. He had a talent for drawing, and after finding favor for a few paintings, he went to London for study and practice. Returning to New York, he soon became known as a rising artist, especially by "Winter Twilight," and the "Lake of the Dismal Swamp." To qualify in genre painting, he studied two years in Paris, and in 1861 settled in London, where he makes his headquarters. Besides the pieces mentioned, he has presented "Passing into Shade," "Coming from Church," "Cold Without," "Morning Prayer," "The Scarlet Letter," "The Idyl of the Birds," "The Return of the May-flower," "Puritans Going to Church," "Clarissa Harlowe," etc. "The Idyl of the Birds" is generally considered his best achievement.

BOUGIE, or BOUGIAH, a fortified seaport in the province of Constantine, Algeria; a town of great antiquity, supposed to have been founded by the Carthaginians. Genseric built walls around it and made it for some time his capital. In the 10th c. it was the greatest commercial city of the n. African coast; and in the 12th and 13th c. Italian merchants had their own warehouses and churches there. In the 15th c. it was a haunt of pirates; the Spaniards took possession in the beginning of the 16th c., and the Turks dispossessed the Spaniards in 1555. Now it has a French church, hospital, barracks, magazine, and a fort; and trade in oil, wine, grain, wax, and oranges. Pop. '72, 2820.

BOUGUEREAU, GUILLAUME ADOLPHE, b. 1825; a French painter; studied at Paris. He made the mural paintings in the St. Louis chapel of the church of St. Clothilde, and those in the church of St. Augustine. One of his best known efforts is the "Triumph of Venus," which has been widely distributed in lithographs and engravings.

BOUHOURS, DOMINIQUE; a French critic, 1628-1702. He was a Jesuit, and preceptor to the sons of the duke of Longueville, and his first book was a life of the duke. At a later period he had charge of the education of the sons of Colbert, the great minister. Among his works are *Les Entretiens d'Artiste et d'Eugène*, many times reprinted; *La Maniere de bien penser sur les Ouvrages d'Esprit*, *Remarks and Doubts upon the French Language*, *Life of St. Ignatius*, *Art of Pleasing in Conversation*, *Life of St. Francis Xavier*, *Pensées Ingénieuses des Anciens et des Modernes*.

BOUILLET, MARIE NICOLAS, 1798-1864; French metaphysician and for nearly a quarter of a century professor of ethics and metaphysics in various institutions. He was councilor in the university, inspector in the academy, and inspector-general of public instruction; editor of the philosophical writings of Seneca, Cicero, and Bacon, and the first translator into French of the *Enneads* of Plotinus. Much of his time was devoted to important contributions to cyclopædias, and the editing of some of the best of those in the French language.

BOUILLON, FREDERIC MAURICE DE LA TOUR D'AUVERGNE, Duc de, son of Henri; 1605-52; brought up a Calvinist. He was in the French military service, but by reason of aversion to Richelieu he went over to the Spaniards. At a later period he became reconciled to Richelieu, and was made lieutenant-gen.; only a year afterwards he was arrested as one of the Cinq-Mars conspirators, and was in danger of execution, but his wife had possession of Sedan and threatened to surrender the place to the Spaniards unless he should be saved. In Rome, after the death of Louis XIII., he became a Roman Catholic, and had command of the papal forces. In 1649, he returned to France, and joined in the civil war against cardinal Mazarin.

BOUILLON, HENRI DE LA TOUR D'AUVERGNE, Duc de, marshal of France; 1555-1623; at first known as viscount of Turenne. He was a convert to Calvinism and a partisan of Henry of Navarre, who, when king, gave him the hand and estate of Charlotte de la Marek, the heiress of the duchy of Bouillon. On the night in which he was to be married, he suddenly left his prospective bride and stormed the fortress of Stenay, then held by the army of Lorraine. He was afterwards complicated in the Biron conspiracy, and took refuge in Geneva. During the Medici regency he was alternately for and against the queen, but amidst his warlike occupations he established a college and library at Sedan. His second wife, a daughter of William prince of Orange, left him two sons, the younger of whom was the celebrated marshal Turenne.

BOULDER, a co. in n. Colorado, e. of the Medicine Bow mountains; intersected by the Colorado Central railroad, and on the Denver and Boulder branch of the Kansas Pacific; 600 sq. m.; pop. '70, 1939; in '80, 10,055; watered by streams running into the South Platte; productions agricultural; besides gold, silver, and coal. Co. seat, Boulder, or Boulder City.

BOULDER, a city in Boulder co., Col., on the Colorado Central, and a branch of the Kansas Pacific railroads, near the e. foot of the Rocky mountains, 25 m. n. w. of

Denver; pop. '80, 3176. There are gold and lignite mines near by. The city is the seat of the state university. There are three churches and two weekly papers.

BOULLONGNE, LOUIS DE, 1654-1734; like his father and brother a French painter; member of the academy, rector thereof, and president; first painter to the king, and designer of medals and devices for the academy of inscriptions. The Gobelinus tapestry for the king's apartments was made after his designs in imitation of Raphael. B. was also an excellent engraver.

BOULTER, HUGH, 1671-1742; chaplain to the archbishop of Canterbury; rector of St. Olave's, archdeacon of Surrey; chaplain to George I.; tutor to Frederick, prince of Wales; bishop of Bristol, dean of Christ church (Oxford), archbishop of Armagh, and primate of Ireland, for 19 years chief justice of Ireland. He expended \$150,000 in adding to the incomes of poor clergymen and their widows, establishing schools, etc. In the famine of 1740 he fed 2500 persons each day at his individual expense. B.'s *Letters to Several Ministers of State in England Relative to Transactions in Ireland from 1724 to 1838* are a valuable contribution to history.

BOU MAZA (SI MOHAMMED BEN ABDALLAH), b. 1820; an Algerian Arab leader, who as a dervish in 1845 excited the people of Dahra against the French, and, in alliance with Abd-el-Kader, engaged in several conflicts. St. Arnaud made him a prisoner and sent him to Paris, where he received a pension and was provided with a home. He escaped, Feb. 23, 1848, but was caught and sent as a prisoner to Ham, where he was kept a year and a half. In the eastern war of 1854, he commanded an irregular corps, and the next year was made a col. in the French army.

BOURBAKI, CHARLES DENIS SAUTER, of Greek descent, b. Paris, 1816; a sub-lieut. of zouaves in 1836, and in 1838 lieut. in the first regiment of the foreign legion. In 1842, he was capt. of zouaves; in 1846, maj. of the native skirmishers, and rapidly rose to be gen. of division. He won great distinction at the Alma, at Inkermann, and in the assault on Sebastopol. He also participated in the Italian expedition in 1859. In 1869 he was commander of the second camp at Chalons, and aid-de-camp to the emperor. In the war with Germany he had an important part in the conflict around Metz, and in the unsuccessful attempt to break through the German lines. In Dec., 1870, he was made chief of the badly demoralized army of the north, which he reorganized; and with it he fought several severe battles. He was at last compelled to retreat toward Switzerland, and in Jan., 1871, he was driven over the Swiss frontier with the remnant of his army. B. was so much discouraged by his many disasters that he attempted suicide, but the wound (a pistol shot in the head) was not fatal. It was said that this act was because Gambetta charged him with treason. After peace he returned to France and received a military command at Lyons.

BOURBON, a co. in s.e. Kansas on the Missouri border and the Little Osage and Marmiton rivers, 576 sq.m.; pop. '70, 15,076; '80, 19,541. The railroads are the Missouri river, Fort Scott and Gulf, and the Missouri, Kansas, and Texas. Agriculture is the chief occupation. Co. seat, fort Scott (100 m. from Kansas city), with a pop. of about 4500.

BOURBON, a co. in n.e. Kentucky, on the South Licking river; 400 sq.m.; pop. '70, 14,863-6677 colored. It is a fine agricultural region, and has among its attractions sulphur and chalybeate springs, and a curious ancient earthwork. The celebrated Bourbon whisky takes its name from this county. The Kentucky Central and the Paris and Mayville railroads traverse the county. Co. seat, Paris.

BOURBON-LANCY, a French watering-place on Saone-et-Loire, 20 m. n.w. of Chârolles; pop. about 4000. Its mineral waters, which were known to the Romans, are useful in rheumatic and nervous affections. There is a hospital here, established by the Marquis d'Aligre.

BOURBON-VENDÉE. See NAPOLEON-VENDÉE.

BOURCHIER, JOHN, Lord Berners, 1474-1532; a descendant of Thomas of Woodstock, duke of Gloucester. B. was educated at Oxford, and was first known by quelling an insurrection in Cornwall. Henry VIII. made him chancellor of the exchequer for life, and he had charge of the king's sister Mary when she went to France to wed Louis XII. At Henry's command he translated Froissart's *Chronicles*, and he also translated the famous *Romance of King Arthur*, *The Exploits of Hugh of Bordeaux*, the *Golden Book* of Marcus Aurelius, and *The Castle of Love*. He also composed a comedy, *Re in Vineam*, which it was customary to act at Calais after vespers.

BOURDEILLES. See BRANTÔME, *ante*.

BOURDON (in music), a drone bass produced by a bagpipe or hurdy-gurdy; also an organ stop, consisting of stopped wooden pipes, usually of 16 ft. tone. It is found on manuals as a "double" stop, and as a soft foundation stop on the pedal organ.

BOURDON, LOUIS PIERRE MARIE, 1799-1854; a French mathematician, professor in several colleges in Paris, inspector of studies, and a member of the council of the university. His *Elements* of arithmetic and algebra were widely used, the algebra, adopted by prof. Davies of West Point, becoming well known in this country.

BOURG, ANNE DU, 1521-59; a French Protestant martyr. He took orders in the Roman Catholic church, but because he became a Calvinist he left the pulpit for the bar, and was imprisoned as a heretic by Henry II. When Francis II. became king, B. asked for release, but about that time one of the judges who had presided at his trial was assassinated, and B. was hanged and his body was burnt.

BOURGEOIS, a type used in book and newspaper printing. When "solid" nine lines fill an inch and a slight fraction over. It is smaller than long primer and larger than brevier. One thousand *ems* of bourgeois occupy 13.86 square inches.

BOURNEMOUTH, an English watering-place on the Hampshire coast, 5 m. from Christ church; pop. '71, 5906. In 1855, a sanitarium for consumptive patients was erected, and several similar establishments have since been founded. The town has churches, hotels, a library and reading-room, and assembly rooms, baths, and a pier 800 ft. long. The climate is remarkable for equality of temperature. The surrounding country is very beautiful.

BOURNONITE, or ENDELLIONITE, is a triple sulphate of antimony, lead, and copper, in the proportions of 19.4 sulphur, 26 antimony, 41.8 lead, and 12.8 copper. It is found in massive crystals.

BOURSAULT, EDMUND; 1638-1701; a French dramatist and satirist. Louis XIV. directed him to prepare a book for the education of the dauphin, and he produced *The True Study for Sovereigns*, which so pleased Louis that he asked B. to become tutor to his son, but being ignorant of Latin he was compelled to decline. Two of B.'s dramas, *Esope à la Fille*, and *Esope à la Cour*, were very popular, and Carville declared one of his tragedies to be worthy of Racine. B. accused Molière of impiety, and assailed the *School for Women* in his *Portrait of a Painter*, to which Molière retaliated by contemptuously calling B. "L'Impromptu du Versailles." B.'s *Satyre des Satyres* was directed against Boileau, whom, however, he afterwards generously offered to assist; in return for which kindness Boileau erased B's name from his satires.

BOURSE. See EXCHANGE, *ante*.

BOUTWELL, GEORGE SEWALL, LL.D., b. Mass., 1818; the son of a farmer, self-instructed after a common-school course; at the age of 18 a student at law, but never a practitioner, having turned his attention to politics. He was seven times chosen to the Massachusetts legislature, and became the leader of the democratic party in his state. He was three times defeated for congress, and once for governor, but was chosen governor in 1851 and re-elected the next year. On the repeal of the Missouri compromise he left the democratic and assisted in the organization of the republican party, in which he soon acquired a prominent position. In 1862, as commissioner, he organized the new department of internal revenue; in 1863, was elected to congress and twice rechosen. In 1868, he was one of the managers of the impeachment of president Johnson; from 1869 to 1873, secretary of the treasury, and then elected to the United States senate. In the financial business of the government, both as a legislator and an executive officer, Boutwell had a large share of influence and responsibility. He has also been overseer of Harvard college, and secretary of the Massachusetts board of education, in which capacity he prepared many valuable reports. He is the author of *Educational Topics and Institutions*, and a *Manual of the United States Direct and Revenue Tar*. His last political office was as a member of the Massachusetts constitutional convention of 1873.

BOUVART, ALEXIS, 1767-1843; a Swiss astronomer, educated in Paris, and in 1804 a member of the bureau of longitudes. He assisted La Place in the *Mécanique Céleste*, and became a member of the academy. Bouvart was the first to point out the irregularities of the planet Uranus, and the investigation of these irregularities led to the discovery of Neptune by Le Verrier and Adams.

BOUVIER, JOHN, 1787-1851; b. France; of a Quaker family; practiced law in Philadelphia, and became associate justice of the court of criminal sessions. In 1839, he published a *Law Dictionary*, which was accepted as a standard work, especially adapted to this country. His chief effort, however, was the *Institutes of American Law*. An only daughter, Hannah M., became proficient in astronomical sciences, and published *Familiar Astronomy*, with a *Treatise on Globes*.

BOVALI, BOUALI, or BOALI, a t. in Africa, capital of the kingdom of Loango, in 4° 30' s., and 12° 1' e., on a river of the same name, not far from the coast. It is in a fertile but unhealthy region, and has a large trade in pepper, ivory, dye-woods, and slaves. Pop. 15,000.

BOVIANUM, a city of ancient Italy, near the site of the present Bojano, believed to have been founded by the Samnites, and represented by Livy as a rich and powerful town. It was captured by the Romans, 311 B.C.; in the second Punic war it was the head-quarters of the Roman army, and in the Social war the capital of the confederates.

BOVINES, or BOUVINES, a village in Flanders, 7 m. s.e. of Lille, on the Marcq, where, July 27, 1214, Philip Augustus of France, defeated Otho IV. of Germany. In 1240, Philip of Valois defeated the English, and May 18, 1794, the French defeated the Austrians, at the same place.

BOWDOIN, JAMES, LL.D., 1727-90; b. Boston; a descendant of Pierre Bowdoin, Huguenot refugee from France; a graduate from Harvard in 1745; representative in the general court, senator, and councilor. He was an early opponent of English oppression, and in 1775 he was chosen president of the colonial council of government. In 1778, he presided over the convention to form a constitution. In 1785, he was chosen governor, succeeding John Hancock in that office. He proved his executive ability by a prompt suppression of the "Shay's rebellion." In 1789, he was a member of the convention that ratified the federal constitution. B. was one of Franklin's friends and correspondents; and one of the founders, and the first president, of the academy of arts and sciences, to which he gave his library. He also left a legacy to Harvard college, and was a liberal patron of the state humane society. The oldest college in Maine bears his name.

BOWDOIN, JAMES, 1752-1811, son of gov. Bowdoin; a graduate of Harvard, studied also at Oxford, and traveled in Europe, returning to America soon after the battle of Lexington. In 1805, he was United States minister to Spain. He left to Bowdoin college 6000 acres of land, with the reversion of the island of Naushon, and also a large library and extensive collection of philosophical apparatus.

BOWDOIN COLLEGE, the oldest and one of the most important seats of learning in Maine, in the village of Brunswick, near the Androscoggin river and the ocean, named after James Bowdoin, gov. of Massachusetts, of which state Maine was formerly a province. The charter was granted by the Massachusetts legislature in 1794, and five townships of land were given towards the foundation. The object of the institution, in the language of the charter, was "to promote virtue and piety, knowledge of the languages, and of the useful and liberal arts and sciences." A dual government was formed, consisting of a board of trustees and a board of overseers. Joseph McKeen, a Dartmouth graduate, was the first president, chosen in 1801, and John Abbott, a Harvard graduate, was made professor of languages. Eight students were accepted in 1802, and in 1806 the first honors of the new college were conferred upon eight graduates. At this time the entire college and the residences of professors were in a single house. On the death of president McKeen in 1807, Jesse Appleton, D.D., became president, and held the chair for twelve years, during which time he did much to advance the efficiency and importance of the institution. James Bowdoin, son of gov. Bowdoin, had given the college 1000 acres of land and about \$5000, and at his death gave, in addition, more land and many valuable mineralogical specimens, books, and paintings. William Allen, D.D., who had been president of Dartmouth college, was the next president (1819). He was in office for twenty years, except for a short period in 1831, when he had a controversy about authority with the newly organized state of Maine. The controversy was ended by a decision in his favor by the U. S. circuit court. After Dr. Allen, Leonard Woods, D.D., was president until 1856. He was followed by Samuel Harris, S.T.D.; and in 1871, Dr. Harris gave place to Joshua L. Chamberlain, LL.D. At the present time there are six or more spacious and well-arranged brick buildings, besides the chapel and memorial hall, which are of granite. The college is governed by 11 trustees and 40 overseers, the president and vice-president being two of the trustees. At the latest reports, there were 12 professors and 140 students. The curriculum is of the usual variety, some of the languages, however, being optional. For undergraduates there is a scientific course, in which the degree of B.S. is conferred. There is a post-graduate course of two years in philosophy and the arts. Those of the graduates who have honorably finished a post-graduate course may be appointed fellows, and reside at the college two years, with all the privileges, without further charge. Military instruction is also given. The medical school has 9 professors and 93 students. Among the benefactors of the college, besides James Bowdoin, have been Mrs. Amos Lawrence, and Daniel W. Lord of Kennebunkport. Of notable graduates there may be named Hawthorne and Longfellow, who had among their fellow-students William Pitt Fessenden, George B. Cheever, D.D., Franklin Pierce (president of the United States), John P. Hale, Sargent S. Prentiss, Calvin E. Stowe, D.D., and Luther V. Bell. Mr. Longfellow was professor of languages until he removed to Harvard. The prevailing religious sentiment of the college is Congregational.

BOWEN, FRANCIS, LL.D., b. Mass., Sept. 8, 1811; graduate of Harvard, and instructor there in political economy and intellectual philosophy. In 1843, he became editor of the *North American Review*, in which capacity he acted 11 years. In 1850, he was proposed for professor of history in Harvard, but was not appointed, his views on the Hungarian revolt and other political topics being unsatisfactory to the board of appointment. In 1853, he succeeded Dr. Walker in the Alford professorship of natural religion, moral philosophy, and civil polity. He has lectured and published largely on the application of ethical and metaphysical science to the evidences of religion, on political economy, on the origin and development of English and American political constitutions, on English philosophers, etc., and opposing Mill, Comte, Kant, Cousin, and Fichte. Some of his works are: *Critical Essays on the History and Present Condition of Speculative Philosophy; Principles of Political Economy applied to the Condition, Resources, and Institutions of the American People*; an annotated edition of *Virgil*, and a revision of Reeves' translation of De Toqueville's *Democracy in America*.

BOWIE, a co. in n.e. Texas, on the Red river and the Arkansas border; intersected by the Texas and Pacific railroad; 892 sq.m.; pop. '70, 4687—2249 colored. It has an undulating surface, with rich bottom-lands, and heavy forests; productions, cotton, corn, sweet potatoes, etc. Co. seat, Boston.

BOWIE-KNIFE, (*ante*), a common hunting knife used by south-western pioneers, improved by col. James Bowie, who has been wrongly represented as a bully and a duelist. The bowie-knife is seldom concealed, and it is by no means the commonly used weapon which it is represented to be by foreigners; indeed, of late years it is seldom seen at all unless among hunters or settlers in the extreme frontiers.

BOWLDERS. See BOULDERS, *ante*.

BOWLES, SAMUEL, 1826-78; b. Mass.; a journalist, for more than 30 years editor of the *Springfield* (Mass.) *Republican*, which he made in some respects the leading journal in New England. He traveled widely over the United States, and was always warmly interested in political affairs, though never holding office. As a practical editor Bowles stood in the first rank, satisfied with nothing less than the best work, sparing neither his own nor his subordinates' strength, not hampered in his work by either fear or friendship. He was an accomplished and fascinating conversationist, cosmopolitan in taste, and liberal in opinion. His travels gave rise to the volumes *Across the Continent*; *Our New West*, and *The Switzerland of America*, which, with his numerous editorial writings, show him a master of clear and vigorous English.

BOWLING GREEN, a t. and seat of justice of Warren co., Ky., 120 m. s.w. of Frankfort, on Barren river, which is navigable to the place by steamboats. Pop. about 6000. It has some manufactures, and trade in tobacco, pork, etc. It is reached by the Louisville and Great Southern railroad.

BOWMAN, THOMAS, D.D., b. Penn., 1817; graduate of Dickinson college, and a minister in the Methodist Episcopal church. He organized Dickinson seminary, at Williamsport, Pa., and presided over it for ten years. In 1858, he was chosen president of Asbury university, at Greencastle, Ind.; he was a delegate to the Bristol conference in 1864, and chaplain to the U. S. senate in that and the following year. In May, 1872, he was made a bishop.

BOWMANVILLE, a t. in Canada, on lake Ontario and the Grand Trunk railroad, 43 m. n.e. of Toronto. It has manufactories driven by water-power, and trade by the lake. Pop. 2000. The harbor is port Darlington, $2\frac{1}{2}$ m. from the town.

BOX ELDER, or ASH-LEAVED MAPLE, *Negundo aceroides*, a small and handsome tree growing along the banks of streams in the middle and southern Atlantic states, and in the west. Sugar is made from it in some of the n.w. states.

BOX ELDER, co. in n.w. Utah, adjoining Nevada; about 6000 sq. m.; pop. '70, 4855. Great Salt lake covers the s.e. portion of the co., and the Central Pacific railroad passes through it. Productions, agricultural. Co. seat, Brigham City.

BOX-TORTOISE, or LOCK-TORTOISE, *cistudo Virginica*, and *cistudo Blandingi*, characterized by the division of the shell into two parts in such a way that the animal can shut himself entirely into the shell. They have longer legs and run faster than other tortoises, but are harmless and very timid.

BOYACA, one of the states of Colombia bordering upon Venezuela and its fellow states of Santander and Cundinamarca; 33,351 sq.m.; pop. '71, 482,874. In the western part of the state is a branch of the Andes, from which the land slopes east in vast prairies, covered to a great extent with marshes and forests, with here and there pastures and cultivated ground, watered by the Orinoco and the Meta. The lowlands are fertile, yielding tropical fruits, sugar, cotton, cacao, tobacco, dyes, drug-stuffs, and timber. In the southern part of the state are many hot springs, the vapors from which in dry weather condense and cover the surrounding country with sulphate of soda, and this is gathered and sold in other sections as a substitute for salt for cattle. There are springs near the capital which are hot by night and cold by day. The climate of the plain is hot and unhealthy; in the valleys it is better, and in the high regions cool. The people have rude manufactures of cotton, wool, straw, etc.; but cattle-raising is the chief business. Gold, lead, and precious stones are found, but not to a great extent. The forests are infested with dangerous wild animals, serpents, and venomous insects. Capital, Tunja, where the Zaques kings once reigned.

BOYCE, WILLIAM, 1710-79, an English musician, the son of a mechanic, who became an organist and conductor of the royal orchestra. His compositions are mainly church music, and many of them are still in use. He was the author of two musical dramas, *The Chaplet* and *The Shepherd's Lottery*.

BOYD, a co. in n.e. Kentucky, on the Ohio and Big Sandy rivers; intersected by the Lexington and Big Sandy railroad; 230 sq.m.; pop. '70, 8573—290 colored. It has a hilly surface, with plenty of hard coal and iron ore. Productions agricultural. Co. seat, Catlettsburg.

BOYD, ANDREW KENNEDY HUTCHISON, D.D., b. Ayrshire), 1825; a Scotch preacher and writer, educated at Glasgow university; a member of the established church, stationed at St. Andrews. He is the author of *Leisure Hours in Town*; *Graver Thoughts of a Country Parson*; *Present Day Thoughts*, and other popular works.

BOYD, JOHN PARKER, 1768-1830; an American soldier, native of Massachusetts, who went to India, where he raised a little army of 500 men (a few of the officers being English), with arms, elephants, etc., which he let to such native princes as chose to hire their services, impartially preferring the highest offer. The trade grew dull, and in 1808 he sold his army and came home, fought as a colonel in the battle of Tippecanoe, and became brig. gen. in 1813. He published some documents relating to the war of 1812.

BOYDEN, SETH, 1785-1870; b. Massachusetts; an American inventor; began making patent leather in 1819; invented a machine for splitting leather, and a process for making spelter. In 1826, he made the first malleable cast-iron. Among other inventions was one for making hat-bodies, and a process for making Russia sheet-iron. He built the first successful locomotive that had the cylinders outside of the frame.

BOYER, JEAN BAPTISTE NICHOLAS, a French physician, 1693-1768. He devoted his life to the investigation and treatment of contagious diseases, and with much success. The courage and ability which he displayed during the plague in Marseilles procured him a pension and the place of physician in ordinary to the king. His best known works are *Account of the Plague at Marseilles in 1720*, and *Observations on the Epidemic that prevailed at Beauvais*.

BOYLE, a co. in central Kentucky; 180 sq.m.; pop. '70, 9515-3679 colored. The Louisville and Nashville railroad passes through the county. The soil is deep and fertile, producing cereals and root crops. Co. seat, Danville.

BOYLE, JOHN, Earl of Cork and Orrery. He was educated at Oxford, and devoted himself to literature, translating the letters of Pliny the younger, and writing a life of Swift in letters to his son. He published also the *Manners of Roland Carey, Earl of Monmouth*, and his own letters from Italy were published after his death.

BOYLE, ROGER, Earl of Orrery, fifth son of the "great earl of Cork," 1621-79. He was made baron Broghill when only five years old; studied at Dublin college, traveled in France and Italy, and married Margaret Howard, sister of the earl of Suffolk. There was a rebellion spreading in Ireland, and B. started to get from Charles II. a commission to raise troops. At London he was confronted by Cromwell, then gen. of the parliamentary forces and one of the committee of state, who told him that the committee knew of his design, but B. declared the information false. Cromwell then produced B.'s private correspondence, and he was compelled to admit, and ask pardon, whereupon Cromwell offered him a command as general officer, exempt from all oaths and engagements, and added that he should not be compelled to draw his sword against any save Irish rebels. Thenceforth B. served the protector honorably and with effect, and Cromwell placed high confidence in him, making him one of his privy council. When the restoration came, it was found that B. had done much towards it, and the king made him earl of Orrery, and soon after one of the lords-justices of Ireland. In 1665, he went to England to settle a serious misunderstanding between Charles and the duke of York, and on his return he rendered abortive a scheme of the French and Dutch for a descent upon Ireland. He wrote several dramas and poems which have long been forgotten.

BOYLE'S LAW. See MARIOTTE'S LAW, *ante*.

BOYLSTON, ZABDIEL, 1680-1766; b. in Mass. When inoculation in cases of small-pox was first called to public attention in this country, B. was the earliest experimenter, all the other physicians rejecting the new notion. He tried it in his own family, and then among others; but the whole profession opposed him, and he came near being mobbed. Finally a number of eminent ministers came to the rescue, and he and inoculation were supported.

BOYNE, BATTLE OF THE, in Ireland, near the river Boyne, July 1, 1690 (in new style the 12th of July is the anniversary). This battle was fatal to the cause of James II., and assured the ascendancy of Protestantism in England. The troops of James, 30,000 in number, were defeated with a loss of 1500, by the forces of William III. (James' son-in-law), who had about the same number of men, but lost only about 500. James fled to Dublin, thence to Waterford, and escaped to France. The duke of Schomberg, the leader of a contingent of French Protestants, while leading his troops across the river, was accidentally shot by one of his own men. In the same battle rev. George Walker, the Protestant leader who so long defended Londonderry, was killed. The battle is sadly remembered now, nearly 200 years after its occurrence, by all Irish Roman Catholics, and on the other hand is joyfully celebrated by Protestants of that nation, who parade on each anniversary, wearing orange colors in allusion to William III., prince of Orange. Even within a few years past the 12th of July has been marked in several American, Canadian, and Irish towns by deeds of violence arising from religious animosity. In New York, in response to the request of the authorities, the Orangemen have ceased their public parades, but celebrate the day by excursions, picnics, or in some other private manner.

BOYSE, or BOIS, JOHN; one of the translators of the English Bible, 1560–1643. He could read Hebrew when only five years of age. At Cambridge he paid especial attention to Greek, and lectured on that language for ten years. While rector of Boxworth he was selected as one of the translators, and it is said did not only his own portion, but also that of another translator.

BOZRAN, or BOSTRA; the name of one or two places mentioned in the Bible—a city of Edom, and a city of Moab. The general opinion is that B. was on or near the present village of el-Buseirah, 25 m. s.e. of the Dead sea. B. is now a small village, with a strong fortress on the top of a hill, in a pastoral district, and inhabited by between 100 and 200 shepherds. The Moabite Bozrah is a vast collection of ruins, about 80 m. s. of Damascus. In 105 A.D., the city was restored and beautified by Trajan, who made it the capital of the province of Arabia. In the reign of Alexander Severus it was made a colony, and in 245 A.D., Philippos, a native of B., ascended the imperial throne. It appears to have been Christianized by Constantine, and was the see of an extensive bishopric. B. was one of the first Syrian cities subjected to the Mohammedans, and was held by them against all attempts of the crusaders at recapture. As late as the 14th c. it was a populous place.

BRABANCONS, mercenary fighters from Brabant and other countries who, in the later middle ages, served any who would pay them. They were poorly organized and little better than banditti.

BRACE, CHARLES LORING, b. Conn., 1826; graduate of Yale; studied in the union theological seminary; a recognized minister, but not in charge of any church. In 1850, in company with Frederick Law Olmstead he made a pedestrian tour in Great Britain; the next year went to Hungary, where he was arrested on suspicion of being one of Kossuth's agents, but was soon released. Afterwards he studied the school systems of Switzerland, England, and other countries. On his return in 1852, he became associated with Rev. Mr. Pease in the early operations of the "New York Children's Aid Society," which made an effort to transport to homes in the country some of the outcast and poor children of the city, and to give instruction and shelter to those who remained. The society at once took favor with the people; B. soon became and still remains the head and soul of it, and its operations have risen to national importance. Through its agency many thousands of unfortunate and neglected children have been made honorable men and women. B. visited Europe again, and the result of his observations is found in *Hungary in 1857; Home Life in Germany; Norse Folk; Races of the Old World*, etc. He has also published *The New West; Short Sermons for Newsboys; Dangerous Classes in New York*, etc.

BRACE, JULIA, b. Conn., 1806; at the age of 4½ years she lost both hearing and sight, and quickly forgot the little she had learned of language. When 19 years old she entered the deaf and dumb asylum in Hartford, where she lived about 30 years, and then made her home with a relative, with whom she was living in Dec., 1879. She has a strong memory, and easily discriminates by feeling the articles belonging to different persons. She knows enough about time to reckon days and weeks, and always recognizes Sunday. Though she has not manifested a profound moral consciousness, she does not steal, nor does she commit any wrong act; she is tenacious of her rights, and does not knowingly invade those of other persons.

BRACHISTOCHROME, the curve of the quickest descent, or the curve which a falling object must make between two points which are not in the same vertical line, if it descended in the shortest possible time. The curve is the common cycloid.

BRACHYLOGUS, the title of a work containing a systematic exposition of the Roman law, compiled probably in the 12th c., though some assign it to the reign of Justinian. The earliest extant edition was published at Lyons in 1549, under the title of *Corpus Legum per Modum Institutionum*, and the title *Brachylogus totius Juris Civiles* first appears in an edition dated 1553. Its value is chiefly historical.

BRACKEN, a co. in n.e. Kentucky, on the Ohio and Licking rivers; 200 sq.m.; pop. '70, 11,409—636 colored. Productions agricultural; co. seat, Augusta.

BRACKENRIDGE, HENRY M., 1786–1861; b. Penn., son of Hugh Henry. He was a lawyer of long practice in Maryland; district judge of Louisiana, in which position he was useful to the government in the war of 1812, of which war he wrote a history. He advocated the acknowledgment of the independence of South American states, and his pamphlet on the subject was deemed of sufficient importance to receive an official answer from the Spanish minister at Washington. Subsequently he was commissioner to the new republics, and in return published *A Voyage to South America*. He was judge of the w. district of Florida for ten years; then removed to Petersburg, where he was chosen to congress. In 1841, he was commissioner under the treaty with Mexico. Besides many essays on various subjects, he published in 1859, in defense of his father, a *History of the Whisky Insurrection*.

BRACKENRIDGE, HUGH HENRY, 1748–1816; b. Scotland; a jurist and author; graduate at Princeton, N. J.; chaplain in the continental army; prepared to practice law; edited the *United States Magazine* of Philadelphia; began law practice at Pitts-

burgh; in 1799 appointed judge of the Pennsylvania supreme court, and held the office until his death. He was concerned in the "Whisky Insurrection" in 1794, and published a defense of his course. He wrote much in verse, the most popular being, *Modern Chivalry, or the Adventures of Capt. Farago*, a humorous burlesque.

BRACKETT, EDWIN E., b. Maine, 1819; a sculptor of eminence, known mainly by his busts of American celebrities: Washington Allston, Richard H. Dana, Bryant, Choate, Longfellow, Sumner, Garrison, John Brown, Benjamin F. Butler, Wendell Phillips, and others.

BRACKETT, WALTER M., brother of Edwin E., b. Maine, 1823; noted as a painter of game fish.

BRACTON, HENRY DE, an English ecclesiastic and chief justiciary in the reign of Henry III. He took the degree of doctor of laws at Oxford, and was itinerant justice for Nottingham and Derby counties in 1245. In 1265, he was appointed chief justiciary. He wrote a comprehensive and systematic work on the laws of England, modeled after the "Institutes" of Justinian.

BRADBURN, SAMUEL, 1751-1815; b. Gibraltar; son of an English soldier; became a Wesleyan local preacher in England in 1773, and the next year an itinerant. He was one of the natural orators of early Methodism, endowed with ready wit and pathos. In 1799 he was president of the Wesleyan conference. After his death his *Sermons on Particular Occasions* were published.

BRADBURY, WILLIAM B., 1816-68; b. Maine; a composer of sacred music, and author in whole or in part of many books for Sunday-schools and choirs, among which are *The Shawm; The Jubilee; The Temple Choir; The Golden Choir; Fresh Laurels*, etc. His works have had much popularity.

BRADFORD, a co. in n.e. Florida, on the Santa Fe river; intersected by the Atlantic and Gulf, and the West India Transit railroads; 940 sq.m.; pop. '70, 3691-824 colored. Productions, corn, cotton, sweet potatoes, and molasses. Co. seat, Lake Butler.

BRADFORD, a co. in n.e. Pennsylvania, bordering on New York; 1170 sq.m.; pop. '70, 53,204; in '80, 53,162. Besides short railroads to its mines, the Northern Central and Lehigh Valley railroads traverse it. The rivers are the Susquehanna, the Towanda, the Wyandung, and Sugar Creek. The surface is hilly, and thickly wooded. Iron, coal, and sandstone are abundant. The main article of export is lumber, but agriculture is the chief occupation. Co. seat, Towanda, 77 m. from Pittston.

BRADFORD, a t. in Essex co., Mass., on the Merrimac river, at the junction of the Boston and Maine and Newburyport railroads. A bridge connects B. with Haverhill. The B. academy for young ladies is an old and celebrated institution, affording a high grade of instruction. Shoe manufacturing is the leading business. Pop. 2347.

BRADFORD, ANDREW, 1686-1742; b. Philadelphia; son of William (the printer). He was the only printer in Pennsylvania from 1712 to 1723. On Dec. 22, 1719, he started the third newspaper in the colonies, and the first in Philadelphia, called *The American Weekly Mercury*. He kept a bookstore, and was for a time postmaster of the city. He was the first printer in Philadelphia to employ Benjamin Franklin as a typesetter.

BRADFORD, JOHN, an English minister; b. early in the reign of Henry VIII. He was secretary to the paymaster of the English forces in France, and used money not his own, but made restitution and resigned his place. He then studied divinity, and bishop Ridley of London appointed him his chaplain. B. was also chaplain to Edward VI., and one of the most popular preachers in the kingdom. When Mary came to the throne he was accused of sedition and sent to the Tower, and finally tried before Gardiner, where he defended his principles to the last. He was condemned, and burnt at the stake in Smithfield, July 1, 1555. Many of his short works are found in the issues of tract societies.

BRADFORD, WILLIAM, 1585-1657; b. England; one of the pilgrims, and second governor of Plymouth colony. He sailed from Leyden, Holland, in the *Mayflower*. One of his first acts, as the successor of gov. Carver, was to confirm the treaty with Massasoit, just in time to suppress a dangerous Indian conspiracy. Bradford's name is in the second patent, which conferred upon him, his "heirs, associates, and assigns," the territory named. He was governor, with some brief interruptions, for 31 years, but declined to serve further. B. was the author of a *History of Plymouth Colony* from 1602 to 1647.

BRADFORD, WILLIAM, 1658-1752; b. England; one of the Quakers who came to Pennsylvania in 1682, landing in the woods where Philadelphia now stands. He was the first printer in Pennsylvania, printing an almanac in 1686. Having become obnoxious to some of the leading settlers for printing so-called seditious writings (for which offense he was tried but not convicted), he settled in New York in 1693, and there printed the laws of the colony. Oct. 16, 1725, he began the first newspaper in that city, *The New York Gazette*. Three years later he set up a paper mill at Elizabeth, N. J. For 30 years he was the only printer in the colony of New York. His body lies in Trinity church-yard.

BRADFORD, WILLIAM, 1755-95; b. Philadelphia; a lawyer, graduated at Princeton. He served as an officer in the revolutionary army, and was appointed attorney-general by president Washington.

BRADFORD, WILLIAM, an American painter, b. of Quaker parents in 1827, at New Bedford, Mass. He was educated for business, and for a while engaged in it at Fairhaven, Mass., but afterwards developed a talent for painting, especially in subjects relating to ships, the sea, and the shore. He made several voyages along the coast of New England and northward as far as Greenland. These furnished him with suggestions for some of his best pictures, among which are "A Stiff Breeze in the Harbor of Eastport," "A Squall in the Bay of Fundy," "The Coast of Labrador," and "Crushed by Icebergs."

BRADLAUGH, CHARLES, b. 1833; an English atheist and sympathizer with radical revolutions; the editor of a paper devoted to reform. In 1873, he made a short visit to the United States, lecturing in the larger cities. In 1880, he was elected to parliament by a vote combined of various elements on the "liberal" side, though that party cannot be considered as favoring his extreme views. The Tories made strong opposition to his admission to the house, partly because he declined to take the usual oath, although he was willing to affirm. A long debate ensued in which Bradlaugh's atheism was held up as a reason for non-admission; but finally, on motion of Gladstone, he was permitted to affirm and take his seat.

BRADLEY, a co. in s. Arkansas, on Saline river; 958 sq.m.; pop. '70, 8646—2529 colored. The surface is level; productions, corn, cotton, sweet potatoes, etc. Co. seat, Warren.

BRADLEY, a co. in s.e. Tennessee, on the Georgia border, 400 sq.m.; pop. '70, 11,652—1,700 colored. The East Tennessee, Virginia, and Georgia railroad and Dalton branch pass through the county. It has an uneven surface, mountainous in some parts. Productions mainly agricultural. Co. seat, Cleveland.

BRADLEY, EDWARD, b. 1827; an English novelist, more generally known by his *nom de plume* of "Cuthbert Bede." He was educated at Durham university and took holy orders, but has devoted his attention almost entirely to literature. *Verdant Green* is one of the best known of his stories.

BRADLEY, JOSEPH P., LL.D., b. N. Y., 1813; graduated at Rutgers college, and practised law in Newark, N. J. In 1870 he was appointed one of the justices of the U. S. Supreme court. He was a member of the electoral commission of 1877.

BRADSHAW, HENRY, an English poet of the 15th century. He was one of the Benedictine monks of St. Werberg in Chester. His works are *De Antiquitate et magnificientia Urbis Cestris*, *Chronicon*; and *Life of the Glorious Virgin St. Werberg*. They are now very rare.

BRADSTREET, ANNE, b. England, 1612; daughter of gov. Thomas Dudley, of Massachusetts; married to Simon B., who also became governor. She was the earliest writer of verse in America, her first volume being published (in England) in 1690, under the title, *The Tenth Muse, lately sprung up in America*, containing "A Complete Discourse and Description of the Four Elements, Constitution, Ages of Man, Seasons of the Year, together with an Exact Epitome of the Four Monarchies, viz., the Assyrian, Persian, Grecian, Roman;" also a dialogue on politics between old and new England, "with divers other pleasant and serious poems." Several editions of her works have been published.

BRADSTREET, JOHN, 1711-74; an English officer who spent nearly his whole life in service in the American colonies. In 1746, he was governor of St. John's, Newfoundland. He served in the French war, was in the attack on Ticonderoga in 1758, and soon afterward surprised and captured fort Frontenac. He served with Amherst in the Ticonderoga expedition of 1759, and against the Indians in the west, making a treaty with them at Detroit in 1764. In 1772, he was made maj.gen.

BRADSTREET, SIMON, 1603-97; b. England, steward to the countess of Warwick; married Anne (the poetess), daughter of Thomas Dudley, and was one of the earliest in founding a colony in Massachusetts. In 1630, he arrived at Salem, vested with the office of assistant judge; was secretary, agent, and commissioner of the united colonies, and in 1662 was sent to congratulate Charles II. on his restoration. From 1620 to 1679 he was assistant governor; 1673-79, deputy governor; and 1679-86, governor, until the charter was revoked. He was restored to office in 1689 and remained in power until the new charter arrived in 1692, when he was made first councillor.

BRADWARDIN, or BREDWARDINE, THOMAS; b. near the close of the 13th c.; archbishop of Canterbury. He was educated at Oxford, and became chancellor of the university and professor of divinity. He was chaplain and confessor to Edward III., whom he attended during his wars in France. He died of plague at Lambeth, 40 days after his consecration as archbishop, in 1349. His principal work is a treatise against the Pelagians. He wrote also on arithmetic, geometry, the quadrature of the circle, and proportion of numbers.

BRADY, HUGH, 1768-1851, an American officer who served under Wayne, and with distinction in the battle of Chippewa in 1812.

BRADY, JAMES TOPHAM, 1815-69; b. New York; a lawyer, educated by his father, who was also a lawyer and a judge. The son became eminent for eloquence, and for almost unbroken success in the cases undertaken by him. In New York he was popular both as a lawyer and a citizen, and especially admired as an off-hand speaker. He contributed largely to newspapers and magazines, but left no collected works.

BRADY, NICHOLAS, D.D., b. Ireland, 1659; with Nahum Tate he made a metrical version of the Psalms of David, and also translated Virgil's *Æneid*. He was a promoter of the revolution, but when the troubles broke out in Ireland in 1690, by his personal influence he thrice prevented the burning of his native town of Bandon, which James II. ordered should be destroyed.

BRADY, WILLIAM MAZIERE, D.D., b. Ireland, 1825; graduate of Trinity college, Dublin; one of the leaders in the movement for the disestablishment of the Irish church, and the author of works on the ecclesiastical history and antiquities of Great Britain and Ireland.

BRAG, a game at cards, usually played by from four to eight persons. The whole pack is used, and the cards rank as at whist except the nines and knaves, which are called "braggers," and rank the same as any cards with which they may be held. An ace and a nine and a knave are called three aces, and a deuce and two brag cards make three deuces, etc. The highest hand is a pair royal, three of a kind, ace being highest; next best, highest pair, and last the single card. There is no playing, the hands are merely shown, and the highest wins the stake.

BRAGANZA, HOUSE OF, the title of the family reigning in Portugal, so named from the old dukes of Braganza. The first duke was a bastard son of king John I. After the death of Sebastian without issue the people, who were forbidden by the constitution of 1159 to accept a foreign prince, took up with the Braganzas; but the Spanish kings ruled Portugal by force until 1640, when Don John, duke of Braganza, was made king with the title of John IV. and the family has ruled ever since.

BRAGG, BRAXTON, b. N. C., 1815; a graduate of West Point; served in the Florida war, and in the Mexican war, where his bravery at Fort Brown, Monterey, and elsewhere, was conspicuous. His conduct at Buena Vista secured him his brevet as lieutenant-col. He resigned from the army in 1856. When the civil war broke out he joined the confederates, and in a short time was made general, succeeding Albert Sydney Johnson, who was at killed Shiloh. He met with several reverses, was defeated by Gen. Grant at Chattanooga, and soon afterward was relieved from command.

BRAHMA (see *ante*), under which the more comprehensive term "Brahmanism" is employed to specify the system of religious institutions originated and elaborated by the Brahmans, who are and have been from an early period the sacerdotal and dominant caste among the Hindus. The earliest phases of religious thought in India of which a clear notion can now be formed, are exhibited in a body of writings which long ago came to be regarded as sacred, known under the collective name of *Veda*, "knowledge," or *Sruti*, "revelation." The Hindu scriptures consist of four separate collections of sacred texts, including hymns, incantations, and sacrificial forms of prayer. They are: 1, the *Rigveda*; 2, the *Saman*, or *Samaveda*; 3, the *Yajush*, or *Yajurveda*; 4, the *Atharvan* or *Atharvaveda*. Each of these four text books has attached to it a body of prose writings called *Brahmanas*, which explain the ceremonial application of the texts and the origin and import of the sacrificial rites for which they were supposed to have been composed. The *Samaveda* and the *Yajurveda* are for purely ritual purposes, and, as they are composed almost entirely of verses taken from the *Rigveda*, are of secondary importance. The hymns of the *Rigveda* are the earliest lyrical productions of the Aryan settlers in India which have come down to us. They all are old, though of varying periods, only the last book having the characteristics of a later appendage. Of the *Atharvan* about a sixth is found in the *Rigveda*. The religious thought of the old bards, as reflected in the hymns, is that of a worship of the grand and striking phenomena of nature regarded in the light of personal and conscious beings, endowed with powers beyond the control of man, yet sensible to his praises and actions. It was a nature-worship nearer than that of any other known form of polytheistic belief; a mythology comparatively little affected by those systematizing tendencies which, in other lands, led to the construction of a well-ordered pantheon and a regular organization of divine government. From the name, "the Shining Ones," given to these impersonations, it must be concluded that the more prominent objects of early adoration were the phenomena of light. In the primitive worship of the manifold phenomena of nature, it is not so much their physical aspect that impresses the human heart as the moral and intellectual forces which are supposed to move and animate them. The attributes and relations of some of the Vedic deities, in accordance with the nature of the objects which they represent, partake in a high degree of this spiritual element; but it is not improbable that in an earlier phase of Aryan worship the religious conceptions were pervaded by it to a still greater extent, and that the Vedic belief, though retaining many of its primitive features, has on the whole assumed a more sensuous and anthropomorphic character. This latter

element is especially predominant in the attributes and imagery applied by the Vedic poets to Indra, the god of the atmospheric region, and the favorite figure in their pantheon. While the representatives of the prominent departments of nature appear to the Vedic bard as independent of each other, their relations to the mortal worshiper being the chief subject of his anxiety, a simple method of classification was already resorted to at an early time, consisting of a triple division of the deities into gods residing in the sky, in the air, and on the earth. It is not, however, until a later stage that this attempt at a polytheistic system is followed up by the promotion of one particular god to the dignity of chief guardian for each one of these three regions. On the other hand, a tendency is clearly traceable in some of the hymns towards identifying gods whose functions present a certain degree of similarity of nature. These attempts seem to show a certain advance from polytheism towards a comprehension of the unity of the divine essence. Another feature of the old Vedic worship tended to a similar result. The great problems of the origin and existence of man and the universe had early begun to engage the Hindu mind; and in celebrating the praises of the gods the poet was frequently led by his religious and not wholly disinterested zeal to attribute to them cosmical functions of the very highest order. At a later stage of thought inquirers could not fail to perceive the inconsistency of such concessions of a supremacy among the divine rulers, and tried to solve the problem by conceptions of an independent power, endowed with all the attributes of a supreme deity, the creator of the universe including the gods of the pantheon. The names under which this monotheistic idea is put forth are mostly of an attributive character, and some are mere epithets of particular gods, such as *Prajapati*, "lord of creatures," and *Visvakarman*, "all-doer." But to some this theory of a personal creator left many difficulties unsolved. They saw that every thing around them, including man himself, was directed by some inward agent; and it needed but one step to perceive the essential sameness of these spiritual units, and to recognize them as so many individual manifestations of one universal principle. Thus a pantheistic conception was arrived at, and put forth under such names as *Purusha*, "soul," *Kama*, "desire," *Brahman* (neuter nom. sing., *brahma*), "devotion, prayer." Metaphysical and philosophical speculations were thus fast undermining the simple belief in the old gods, until, at the time of the composition of the *Brahmanas* and the *Upanishads*, we find them in complete possession of the minds of the theologians. While the theories crudely suggested in the later hymns are now further matured and elaborated, the tendency towards catholicity of formula favors the combination of the conflicting monotheistic and pantheistic conception; this compromise, which makes *Prajapati*, the personal creator of the world, the manifestation of the impersonal *Brahma*, the universal self-existent soul, leads to the composite pantheistic system which forms the characteristic dogma of the Brahmanical period.

The division into *castes* in India is well known. The hymn to *Purusha* names them as, 1, the Brahmanas; 2, Kshatriyas; 3, the Vaisyas; and, 4, the Sudras. There was a long conflict between the first and second of these castes, but the final subjection of the second left absolute power in the hands of the first, the Brahmins, or priests. They elaborated a system of laws, using some of Manu's code, in which they made no scruple to fortify and protect themselves. The very lowest class was of no importance, but the other three, however unequal to each other in privileges and social standing, were united by a common bond of sacramental rites, traditionally connected from ancient times with certain stages and incidents in the life of the Aryan Hindu, such as conception, birth, name-giving, the first taking out of a child to see the sun, the first feeding with boiled rice, the rites of tonsure, the youth's investiture with the sacrificial thread, and his return home on completing his studies, with the ceremonies of marriages, funerals, etc. The most important of these family observances is the rite of conducting the boy to a spiritual teacher, with which is connected the investiture with the sacred cord, ordinarily worn over the left shoulder and under the right arm, and varying in material according to the class of the wearer. This ceremony is supposed to constitute the second or spiritual birth of the *arya*, and is the preliminary act to the youth's initiation into the study of the *Veda*, the management of the consecrated fire, and the knowledge of the rites of purification, including the solemn invocation to *Savitri* (the sun), which has to be repeated every morning and evening before the rising and setting of that luminary. It is from their participation in this rite that the three upper classes are called the "twice born." The ceremony is enjoined to take place some time between the 8th and 16th year in case of a Brahmin; for a Kshatriya between the 11th and 22d; and of a Vaisya between the 12th and 24th. He who has not been invested with the mark of his class within the prescribed time is forever excluded from uttering the prayer to the sun, and becomes an outcast, unless absolved from his sin by a council of Brahmins, when, after due purification, he resumes the badge of his caste. With one not duly initiated no righteous man is allowed to associate or to enter into connections of affinity. The duty of the Sudra (the lowest caste) is to serve the twice-born classes, particularly the Brahmins. One of this caste is excluded from all sacred knowledge, and if he perform sacrificial ceremonies he must do so without using holy utensils. No Brahmin may recite a holy text where a man of the servile cast might overhear him, nor may he teach them the laws of expiating sin. The occupations of the Vaisya are connected with trade, agriculture, and the raising of cattle; while those of the Kshatriya consist

in ruling and defending the people, administering justice, etc. Both these castes share with the Brahman the privilege of reading the Veda, but only so far as it is taught and explained to them by their spiritual preceptors. To the Brahman belongs the right of teaching and expounding the sacred texts, and also that of interpreting and determining the laws and rules of caste. Yet, in spite of those formidable barriers between the several orders, the practice of inter-marrying appears to have been too prevalent in early times to have admitted of suppression. To marry a woman of higher caste, and especially of a caste not immediately above one's own, is positively prohibited, the offspring of such a union being excluded from performing obsequies to his ancestors, and incapable of inheriting the parent's property. But, according to Manu, a man may marry a girl of any or each of the castes below his own, provided he has already a wife of his own class, since she only should perform the duties of personal attendance and religious observance devolving upon a married woman.

The self-exaltation of the highest class was due, not altogether to priestly arrogance and ambition, but, like a prominent feature in the post-Vedic belief—the transmigration of souls—it was the natural consequence of the pantheistic doctrine. To the Brahmanical thinker, who saw in the numberless individuals of animate nature but so many manifestations of the one eternal soul, to a union with which they must all tend as their final goal of supreme bliss, the greater or less imperfection of the material form in which they were embodied naturally presented a continuous scale of spiritual units from the lowest degradation up to the absolute purity and perfection of the supreme spirit. To prevent one's sinking yet lower, and by degrees to raise one's self in this universal gradation, or, if possible, to attain the ultimate goal immediately from any state of corporeal existence, there was but one way—subjection of the senses, purity of life, and knowledge of the deity. As Manu's code concludes: "He who in his own soul perceives the supreme soul in all beings, and acquires equanimity towards them all, attains the highest state of bliss." The life marked out for the Brahmins by that stern theory of class duties which they themselves had marked out, and which must have been practiced in the early times, at least in some degree, was by no means one of ease and amenity. It was, on the contrary, well calculated to promote that complete mortification of the instincts of animal nature which they considered as indispensable to final deliverance from the revolution of bodily and personal existence.

The devoted Brahman who desired to obtain the utmost good upon the dissolution of his body, was enjoined to pass successively through four orders or stages of life, viz.: 1, that of religious student; 2, that of householder; 3, that of anchorite; 4, that of religious mendicant. Theoretically, this course was open and recommended to every twice-born man, his distinctive occupations being in that case restricted to the second condition, or that of married life. Practically, however, persons of the second and third castes were doubtless in general content to go through a term of studentship in order to obtain a certain amount of religious instruction before entering into the married state and performing their professional duties. In the case of the sacerdotal class, the practice was probably all but universal in early times; but gradually a more and more limited proportion seem to have carried their religious zeal to the length of self-mortification involved in the two final stages. When the youth had been invested with the sign of his caste, he was to reside for some time in the house of some religious teacher, well read in the Veda, to be instructed in the knowledge of the scriptures and the scientific treatises attached to them, in the social duties of his caste, and in the complicated system of purificatory and sacrificial rites. According to the number of Vedas he intended to study, the duration of the period of instruction was to be—probably in the case of Brahmanical students chiefly—of from 12 to 48 years; during which time the virtues of modesty, duty, temperance, and self-control were to be firmly implanted in his mind by unremitting observance of the most minute rules of conduct. During all this time the Brahman student had to subsist entirely on food obtained by begging from house to house; and his behavior towards the preceptor and his family was to be that prompted by respectful attachment and implicit obedience. In the case of girls no investiture takes place, the nuptial ceremony being considered an equivalent for that rite. On quitting the teacher's abode, the young man returns to his family and takes a wife. To die without leaving legitimate offspring, and especially a son to perform the periodical rite of obsequies to his father, is considered by the true Hindu a very great misfortune. There are three sacred debts which a man has to discharge in life: that which is due to the gods, of which he acquits himself by daily worship and sacrificial rites; that due to the ancient and inspired seers of the Vedic texts, discharged by the daily study of the scriptures; and the final debt which he owes to his *manes*, and of which he relieves himself by leaving a son. Some authorities add a fourth—the debt owing to human kind, which demands the practice of kindness and hospitality; hence the necessity of entering into the married state. When the husband leads the bride from her home to his own, the fire which has been used for the marriage ceremony goes with the new couple, to serve as their domestic fire; and it has to be kept up perpetually day and night, either by themselves or their children, or, if the man be a teacher, by his pupils. If it should become extinguished by neglect or otherwise, the guilt thereby incurred must be atoned for by an act of expiation. The domestic fire serves the family for preparing their food, for making the fire necessary daily for occasional offerings, and for

performing sacramental rites. No food should be eaten that has not been duly consecrated by a portion of it being offered to the gods, the beings, and the *manes*. These three daily offerings are also called by the collective name of the sacrifice to all the deities. The remaining two are the offering to Brahma—that is, the daily lecture of the scriptures, accompanied by certain rites—and that to men, consisting in the entertainment of guests. The domestic observances, many of which must be considered as ancient Aryan family customs, surrounded by the Hindus with a certain amount of adventitious ceremonial, were generally performed by the householder himself, with the assistance of his wife. There is, however, another class of sacrificial ceremonies of a more pretentious and expensive kind, called *srauta* rites, or rites based on revelation, the performance of which, though not indispensable, was yet considered obligatory under certain circumstances. They formed a powerful weapon in the hands of the priesthood, and were one of the chief sources of their subsistence. Owing to the complicated nature of these sacrifices, and the great amount of ritualistic formulas and texts recited during their performance, they required the employment of a number of professional Brahmins, frequently as many as 16, who had to be well rewarded for their services. Priests who refuse money for their services are eulogized by Brahminical writers; but such virtue was rare. The manuals of the Vaidak rituals generally enumerated three of these rites: *ishtis*, or oblations of milk, curds, clarified butter, rice, grain; annual offerings; and libations of *soma*. The *soma*, which is an intoxicating drink prepared from the juice of a kind of milk-weed, sometimes called the moon-plant, must have played an important part in the ancient worship, at least as early as the Indo-Iranian period. It is continually alluded to both in the *Zend Avesta* and the *Rigveda*. In the latter work the hymns of a whole book are addressed to it, either in the shape of a mighty god, or in its original form, as a kind of ambrosia endowed with wonderfully exhilarating powers. In post Vedic mythology *soma* has become identified with the lunar deity, to whom it seems to have had some relation from the beginning. Among the Vaidik rites the *soma*-sacrifices are the most solemn and complicated, and those to which the greatest efficacy is ascribed in remitting sin, conferring offspring and even immortality. They require the attendance of 16 priests, and are divided into three groups, according as the actual pressing and offering of the *soma* occupies only 1 day, or between 1 and 12 days. The performance of all *srauta* sacrifices require two other fires besides that used for domestic rites. The act of first placing the fires in their respective receptacles, after due consecration of the ground, constitutes the essential part of the first duty, which the householder should have performed by four Brahmins immediately after the wedding. To the same class of sacrificial ceremonies belong those performed on the days of the new and full moon, the oblation at the commencement of the three seasons, the offerings of first-fruits, and other periodical rites. Besides these regular sacrifices, the *srauta* ceremonial includes a number of most solemn rites, which, on account of the objects for which they are instituted, and the enormous expenditure they involve, could be performed only on rare occasions and by powerful princes. Of these the most important are the inaugural ceremony of a monarch who claims supreme rule, and the horse sacrifice, one of great antiquity, enjoined by the Brahminical ritual upon kings desirous of attaining universal sovereignty. The efficacy ascribed to this ceremony in later times was so great that the performance of a hundred such sacrifices was considered to deprive Indra of his position as chief of the immortals.

When the householder is advanced in years, when he sees his skin become wrinkled and his hair gray, when he sees the son of his son, the time is said to have come for him to enter the third stage of life. He should now disengage himself from all family ties—except that his wife may accompany him if she choose—and repair to a lonely wood, taking with him his sacred fires and the implements required for the daily and periodical offering. Clad in a deer's skin, or in a single piece of cloth, or in a bark garment, with his hair and nails uncut, the hermit is to subsist exclusively on food growing wild in the forest, such as roots, green herbs, fruits, wild rice and grain. He must not accept gifts from any one, except of what may be absolutely necessary to maintain him; but with his own little hoard he should, on the contrary, honor to the best of his ability those who visit his hermitage. His time must be spent in reading the metaphysical treatises of the Veda, in making oblations, and in undergoing various kinds of privations and austerities, with a view to mortifying his passions and producing in his mind an entire indifference to worldly objects. Having by these means succeeded in overcoming all sensual affections and desires, and in acquiring perfect equanimity towards everything around him, the hermit has fitted himself for the final and most exalted order, that of the devotee or religious mendicant. As such he has no further need of either mortifications or religious observances; but “with the sacrificial fires reposit in his mind” he may devote the remainder of his days to meditating on the divinity. Taking up his abode at the foot of a tree in total solitude, “with no companion but his own soul,” clad in a coarse garment, he should carefully avoid injuring any creature or giving offense to any human being that may happen to come near him. Once in a day, in the evening, “when the charcoal fire is extinguished and the smoke no longer issues from the fire-place, when the pestle is at rest, when the people have taken their meals and the dishes are removed,” he should go near the habitations of men in order to beg the little food that may suffice to sustain his feeble frame. Ever pure of mind, he

should thus bide his time, "as a servant expecteth his wages," wishing neither for death nor for life, until at last his soul is freed from its fetters and absorbed in the eternal spirit, the impersonal, self-existent *Brahma*.

The study of the ancient Hindu literature has taught us that some practices which have hitherto, or until recently, prevailed in India, and which have contributed much to bring Hindu morals into disrepute, are comparatively modern innovations. Thus, the rites of *sutte* (prop. *sati*, "the faithful wife") or the voluntary immolation of widows, which was abolished with considerable difficulty about 30 years ago, seems to have sprung up originally as a local habit among the Kshatriyas, and, on becoming more and more prevalent, to have at length received Brahmanical sanction. The alleged conformity of the rite to the Hindu scriptures has been shown to have rested chiefly on a misquotation, if not an intentional garbling, of a certain passage of the *Rigveda*, which, so far from authorizing the cremation of the widow, bids her return from the funeral rite to her home and resume her worldly duties. Cases of infanticide are still frequent in many parts of India, especially among the Rajputs; but the priests have never sanctioned the practice. Its origin has to be sought in the enormous extravagances of wedding feasts, and in a notion that parents are disgraced by their daughters remaining husbandless. Hence, also, the practice of early marriage, which is the more mischievous as the Hindu law does not allow widows to marry. The cow has been held in high honor in India from early times; but the abhorrence of slaughtering and eating the flesh of kine is of late origin. It has been conclusively shown by a Hindu scholar that in former times beef formed a staple article of food. (For particulars and varieties of Hindu doctrines, etc., see INDIA, BUDDHISM, PARSEES, SIKHS, VEDA, MARUT, SURYA, USHAS, UPANISHAD, METEMPSYCHOSIS, VEDANTA, VAISHNAVAS, SAIVAS, SAKTAS.)

BRAIN, DISEASES OF THE, are comprehended in six general classes, viz.: 1. Cerebral congestion; 2. cerebral anemia; 3. cerebral hemorrhage; 4. inflammatory diseases; 5. structural lesions; 6. functional disturbances. Active congestion of the B. is a well-known and dangerous disease; but may often be removed by proper treatment. Cold applied to the head, and warm stimulating applications to the extremities, are very useful. Passive congestion is marked by a livid face, dull pains, sluggishness of the mental faculties, and disturbed sleep. Cerebral anemia includes diseases arising from impoverished or otherwise disordered blood, and is marked by frequent fainting, paleness of the face, and gasping as if actually dying. The natural remedies are to stimulate the action of the heart so as to increase the flow of blood to the head, and placing the body in a horizontal position, with the head lowest. Dashing cold water into the face will often excite the heart to the required action. There are many other forms of anemia, general or partial. Cerebral hemorrhage, or bleeding in the substance or between the parts of the brain, is generally a consequence of disease of the arteries of the B., and is often developed in apoplexy or hemiplegia. In attacks of apoplexy dependent upon extravasation of blood, the body should be kept quiet, with the head raised, applying cold water or ice thereto, and removing all articles of clothing that may press upon the neck or chest. It should be known that cerebral hemorrhage is seldom preceded by symptoms; hence, in general, ringing in the ears, dizziness, and other symptoms which some fear to be indicative of an apoplectic attack are really not so. Inflammatory affections of the brain are seated either in the membranes or the cerebral substance, oftenest in the former. They are generally included in the term meningitis, which is acute, sub-acute, or chronic, and there is a tuberculous variety. The causes in cases not arising from actual injury to the head, are generally excessive use of alcoholic liquors, or exposure to severe heat. This form of development occurs chiefly in adults. Children are oftener subject to acute inflammation in the course of measles, scarlet fever, or erysipelas. The leading local symptoms of acute meningitis are pain in the head, a flushing of the face, intolerance of loud sounds and strong light, increased sensibility of the surface of the body, throbbing of the arteries in the neck and head, and delirium which is often violent and accompanied with hallucinations. There is usually fever, and sometimes there are convulsions. In the second stage there is heavy sleepiness ending in coma, paralysis of some of the facial muscles or of the limbs on one side, dilatation of the pupils, and irregular pulse; symptoms that betoken speedy death. A very large proportion of cases of simple acute meningitis end fatally, sometimes almost immediately or within a few hours, but occasionally a week may intervene. Treatment should be directed by a physician. When acute cerebral meningitis affects the membranes of the spinal cord, it is not only extremely fatal but is epidemic. There are other varieties of more or less importance that can be understood only by professional men, and, as a matter of safety, all brain affections should be dealt with under the direction of a physician. The same must be said of lesions affecting the structure of the brain, too many and various to describe; and to these must be added functional diseases which produce mania, monomania, melancholia, dementia, etc.

BRAINARD, JOHN GARDINER CALKINS, 1796-1828: b. Conn.: a graduate of Yale; editor of a newspaper in Hartford, in which he published many pieces of verse. After his death a volume of his poems was published, and a third edition was issued in 1842, with a memoir by John G. Whittier. B. ranks high in class next below the greatest American poets.

BRAINERD, DAVID, 1718-47; an American missionary, b. Conn. His missionary work was among the Indians in Massachusetts and those around the Delaware and Susquehanna rivers. President Edwards wrote his biography, and that and B.'s journals are well known. B. was a man of strong mental powers, extensive knowledge, great sagacity, and fervent zeal, and as a preacher he was forcible and pathetic.

BRAINTREE, a t. in Norfolk co., Mass., 10 m. s. of Boston, on the Old Colony, Newport and Southside railroads; pop. '70, 3948; in '80, 3856; a manufacturing place for boots and shoes, linen, woolen, paper, machinery, etc. The town of Quincy was formerly included in Braintree.

BRAIZE, or BECKER, *Pagrus vulgaris*, the fish popularly called the porgie, or scup; a common and good table-fish.

BRAKE, a contrivance to stop motion by friction, applied mainly to car wheels and hoisting apparatus. Originally it was a flexible iron band so placed that it might be drawn tightly around most of the outer surface of the revolving wheel, the friction gradually slackening the motion. In carriages curved blocks of wood were used, and pressed against the tire by a lever worked with the hand or the foot. Modern invention has given us systems of brakes that may be instantly applied to every wheel in a train of cars. For the Creamer brake, once somewhat in favor, a powerful spiral spring was the power applied. This spring was coiled in a drum through which a shaft passes, and was set free by the brakeman, or all the brakes on a train could be set free by one act of the engineer. The Westinghouse air-brake is now very generally used in America. Each carriage has beneath its floor a cylinder and piston which may be operated by compressed air; the piston acts on suitable levers and rods to set the brakes against the wheels, the brakes being also connected with the ordinary braking mechanism at the platform of the cars. Compressed air is conveyed to the cylinders by tubes leading from a reservoir at the locomotive, and this reservoir is filled by a special engine which is independent of the ordinary motive mechanism. The special engine acts automatically, starting when the pressure of air in the reservoir is below a fixed standard, and stopping when the pressure reaches another fixed standard. The engine-driver communicates the compressed air to the cylinders by the simple act of turning a valve-handle through one fourth of a circumference; the brakes are instantly "set" with great force throughout the train. A different system uses a vacuum, and the pistons beneath the cars are acted on by atmospheric pressure, when the cylinders are in communication with the vacuum reservoir. The Westinghouse and the other air brakes serve to place the train very fully under the control of the engine-driver; permitting the stoppage of trains from high speed in a very short space.

BRANCALEONE, DANDOLO, d. 1258; a Ghibelline senator of Bologna, famous for his firmness in restoring order in a lawless period. He executed leading men of the most powerful families, and destroyed the strongholds of disturbers of the peace, checked the power of the church and the nobles, and with the strong hand suppressed public robbery. Yet he was deposed and arrested, and was in danger of execution; but he held hostages of the great families and was restored to power. His death was greatly lamented, and it was reported that "his head, inclosed in a costly vase, was deposited in a lofty column of marble."

BRANCH, a co. in s. Michigan, on the Indiana border; 578 sq. m.; pop. '70, 26,226; undulating surface, with forests and oak-openings; fertile, producing the usual agricultural crops. There is iron in some places. The railroads are the Michigan Central and Fort Wayne, and the Jackson and Saginaw. Co. seat, Coldwater.

BRANDE, WILLIAM THOMAS, 1788-1866; an English chemist. He studied medicine, became a fellow of the royal society, and assistant to sir Humphrey Davy, succeeding him in the chair of chemistry in 1813. From 1816 to 1836 he and Faraday were joint editors of the *Quarterly Journal of Science and Art*, and in 1853 he received the honorary degree of D.C.L. of Oxford. B. was the author of several books on chemistry; but his fame rests chiefly upon his *Dictionary of Science, Literature, and Art*, a very useful work.

BRANDENBURG, CONFESSION OF, a confession of faith prepared by order of the elector of Brandenburg, with a view of reconciling the tenets of Luther with those of Calvin, and to terminate the disputes provoked by the Augsburg confession.

BRANDON, a village in Rutland co., Vt., on the Rutland division of the Central Vermont railroad, 16 m. n. of Rutland; pop. of township, '80, 3280. The place is noted for marble quarries. There are many manufactories; scales, iron castings, marble works, and mineral paints being among the most important. Near by are mines of iron, kaolin, and lignite.

BRANECKI, or BRANICKI, FRANCISZEK XAWERY, d. 1819; a Polish statesman, who attended Poniatowski at St. Petersburg, and was privy to his amours with Catherine II. When Poniatowski came to the throne he rewarded B. with many honors, and he rose to be grand constable. B. was among the earliest to favor the partition of Poland, and was also active in the second dismemberment, for which, in 1794, he was declared to be a traitor. After the final partition he retired from public life and spent his days on the estates given to him by Catherine. In 1840, his descendants were made counts.

BRANFORD, a t. in New Haven co., Conn., on Long Island sound, and the New York and New London railroad, 8 m. e.s.e. of New Haven; pop. 2488. It is a place of summer resort, and has a good harbor for small craft.

BRANNAN, JOHN MILTON, b. 1819; a graduate of West Point; served in the Florida Mexican, and the civil war; was made brevet maj.gen. in 1865.

BRANT, a co. in the province of Ontario, Canada, drained by Grand river and traversed by the Grand Trunk, Great Western, and Canada Southern railways; 420 sq.m.; pop. '71, 32,259. The principal productions are lumber, wool, hops, grain, butter, cheese, etc. Chief town, Brantford.

BRANT, JOSEPH (THAYENDANEGA), 1742-1807; a noted Indian chief of the Mohawks. He was a friend and secretary of gen. William Johnson in the Indian wars of 1755 and later, and took the English side in the revolution, having part in the massacre of Cherry valley and other bloody transactions. After the war he used his great influence to preserve peace. B. was strongly opposed to the sale of liquor to his red brethren. He had a tolerable education, and assisted in publishing a prayer-book and St. Mark's gospel in the Mohawk tongue. Col. Stone of New York wrote *The Life of Joseph Brant*, which was a popular book for half a century.

BRANTFORD, a t. in Ontario, Can., in Brant co., 75 m. n.w. of Buffalo, on the banks of Grand river, on the Goderich and Buffalo railroad; pop. '71, 8107. Manufacturing is the chief business.

BRASHEAR CITY, a port of entry in Louisiana, on the Atchalafaya river, 80 m. from New Orleans, on the Morgan, Louisiana and Texas railroad. It has a good harbor, and a custom-house. The name has recently been changed to MORGAN CITY.

BRASSEUR DE BOURBOURG, CHARLES ÉTIENNE, Abbé, b. Sept. 8, 1814; a French archæologist who studied theology at Ghent and was ordained at Rome in 1845. He was appointed vicar-general at Boston, Mass., in 1846. From 1848 to 1863, he spent nearly all his time in explorations in the s.w. United States, Mexico, and Central America, and in 1864 he was archæologist to the French expedition to Mexico. He is known for careful and philosophical study of indigenous American languages. In 1864, he announced that he had discovered in old archives at Madrid a key to inscriptions on the Central American monuments, and subsequently published a grammar and vocabulary of the Aztec tongue. One of his more important works is a *History of the Civilized Nations of Mexico and Central America during the ages prior to Christopher Columbus*; written from original documents entirely unedited, taken from the ancient archives of the aborigines, containing words of the heroic period in history of the Toltec empire." A bibliophilist of the day says of Brasseur de Bourbourg: "It is very difficult to assign the place which this extraordinary man will occupy in the annals of science, for his works are to-day nearly as great mysteries as the hieroglyphs his labors have illustrated. His industry in his researches into the history of the Aztec races is something not less than marvelous. When he had, with heroic sacrifice of all personal ease, accepted the life of self-immolation of a missionary to the Indians of Mexico; had studied for years the relics of Aztec picture-writing; had learned and systematized in great treatises their modern dialects; the immense works which he then printed upon the history of the pre-Cortesian races, made scarcely a ripple on the quiet of the scientific world. He stands alone in the vast temple of learning which he has restored, if he did not erect. No human being can contest his solution of Aztec pictographs, nor does there exist one who can prove it to be true. His numerous volumes have at least this merit—they have done much to perpetuate the memory of a wonderful race."

BRASSEY, THOMAS, 1805-70; an English surveyor, widely known as a railway contractor of great capacity and enterprise. He was of an ancient family; received an ordinary education, and at the age of 16 became apprentice to a surveyor, to whose business he succeeded. His first railway contract was for a portion of the Grand Junction; then he completed the London and Southampton, with contracts involving \$20,000,000, and 3000 workmen. In 1840, with a partner, he built the railway from Paris to Rouen, and a few years later was concerned in five other French lines, and as many in England, employing 75,000 men, and paying for labor alone from \$75,000 to \$100,000 every week. The capital involved in his contracts at this period was equal to \$180,000,000. Having built railways in the countries named, and in Holland, Prussia, Spain, and Italy, he undertook the Grand Trunk of Canada, 1100 m. in length, with the great bridge over the St. Lawrence at Montreal; and in subsequent years divisions of his army of laborers were found in almost every country in Europe, India, Australia, and South America. He was generous, modest, and simple in his tastes and manners. Though undecorated at home, he received the cross of the legion of honor from France, the order of St. Maurice and St. Lazarus from Victor Emmanuel, and the iron cross (the first time it was given to a foreigner) from Austria.

BRATTICE, the term applied to a partition of plate-iron or other suitable material which divides the main shaft of a mine lengthwise into two or more parts or gangways, to secure upward and downward ventilation.

BRATTLE, THOMAS, 1657-1713; b. Boston; a graduate of Harvard, who became one of the leading merchants of the eastern states. He published many papers on

astronomical subjects, and in a private letter gave a good account of the witchcraft delusion.

BRATTLEBORO, a t. in Windham co., Vt., on the Connecticut river, and the Central Vermont railroad; 93 m. w. of Boston; pop. '70, 4933; in '80, 5882. It is connected with Hinsdale, N. H., by a bridge. It has an asylum for the insane, endowed with \$10,000 by Mrs. Anna Marsh, a seminary for young ladies, and several large factories.

BRAVO, NICOLAS, 1790-1854; a Mexican statesman and soldier who took part in the revolution of 1810 and others that followed. He was a firm supporter of Iturbide, the last emperor, and was a member of the regency of 1822; then deserted the emperor and was a member of the provisional government. In 1827, he led a revolt against Bustamante. In 1842, he held the chief executive power in the absence of Santa Anna, and was again president in 1846 until forcibly deposed. He fought for Mexico in the war with the United States in 1846, and after 1853 retired from public life.

BRAVO-MURILLO, JUAN, b. 1803; a Spanish statesman; at first a theological student; then a lawyer; the editor of the first law journal in Spain, also editor of two other journals. In 1837, he was a leading member of the Cortes, but was proscribed after the revolution of 1841, and took refuge in France. He was in the ministry in 1847, and on the resignation of Narvaez became prime minister. The revolution of 1854 caused him to fly again, but after 1856 he was recalled and given eminent positions.

BRAXTON, a co. in West Virginia. 646 sq.m.; pop. '70, 6480; in '80, 9730. It is a hilly and wooded region, but well watered, and generally fertile. Co. seat, Sutton.

BRAXTON, CARTER, 1733-97; b. Virginia; one of the signers of the declaration of independence. He succeeded Peyton Randolph as a delegate in the Continental congress, and served in the state legislature.

BRAY, a parish in Berkshire, England, 25 m. w. of London. In this curacy a vicar in the 16th c. was a Roman Catholic with Henry VIII., a Protestant when the king changed his mind, again a Roman Catholic under Mary, and again a Protestant under Elizabeth; avowing his only religion to be to "live and die vicar of Bray."

BRAY, Sir REGINALD, d. 1503; an English architect, a favorite of Henry VII. He built the chapel of that king in Westminster abbey, and decorated St. George's chapel at Windsor.

BRAY, THOMAS, D.D., 1656-1730; educated at Oxford, and rector of Sheldon. He was sent to America to regulate the affairs of the church just established in the colony of Maryland, and afterwards took much interest in foreign missions, in aid of which he published *Bibliotheca Parochialis*, and a discourse on *Apostolical Charity*. He was also the author of *Catechetical Lectures*; *Martyrology*, or *Papal Usurpation*; *Directorium Missionarium*, and some other works.

BRAZEN SEA, the large metal vessel, probably of copper, oval shaped, with 12 oxen for a pedestal—the beasts standing in a circle with their heads outward, and the vessel resting on their rumps. It was in the priests' court of Solomon's temple, and held water for the use of the servitors.

BRAZIL (*ante*) comprises 3,288,000 sq.m.; and the several islands adjoining in the Atlantic, the most important of which is Fernando Noronha, 250 m. e. from cape St. Roque, and the penal settlement of the empire. The boundaries of B. are sufficiently described, *ante*. The most striking physical feature of the country is the Amazon river, which with its numerous tributaries affords 30,000 m. of navigation within the territory of the empire. (See AMAZON.) Next in importance is the Tocantins river, which rises in the s. central part of the country, and flows directly n. for 500 m., uniting with the Para branch of the Amazon. The river Araguaya, parallel with and w. of the Tocantins, divides about midway in its course, and afterwards unites, inclosing between its two channels the remarkable Bananal island, 220 m. in circumference, and containing a lake 80 m. in extent. The Turyassu, Maranhao, and Paranahyba are the largest of the other rivers of the n.e. slope. The San Francisco occupies a wide inclosed basin of the eastern highland, and has a course n. and e. of 1800 m., navigable 160 m. from the ocean. Further s. on the coast slope are the Paraguasu, the Rio de Contas, the Belmenti, the Rio Doce, and the Paranahyba do Sul, all of them to some extent navigable. The great rivers of the southern watershed are the Parana and the Paraguay (q. v.). The Parana rises in a broad basin which extends for 700 m. in width across s. Brazil. The Paraguay has its source in several small lakes between 13° and 14° s., taking in as it flows southward a number of large and small streams, and affording uninterrupted navigation through nearly its whole course, large steamers running up about 1000 m. in a direct line from Buenos Ayres, and smaller craft going 300 m. further. The other large rivers, such as the Xingu, Tapajos, Madeira, Purus, Juruá, Javari, Zapura, Negro, Jamudá, etc., are tributaries of the Amazon.

In respect to elevation, the surface of the country is divided into the higher regions of plateaus, ridges, and broad open valleys, occupying the whole of the country s. of the latitude of cape St. Roque, and the vast lowland plain of the Amazon, extending across the continent to the base of the Andes of Peru, Ecuador, and Colombia, rising in the extreme n. to the ranges which form the boundary of Venezuela and Guiana. The

highest and most important mountains in B. are the Serra da Mantiqueira and the Serra do Espinhaço, between 18° and 23° s., and from 100 to 200 m. from the sea-coast. The highest peak has been estimated from 8900 to 10,300 feet. There is a coast range of mountains beginning n. of Rio Janerio, and running both n. and s. not far from the ocean; but none of the peaks exceed 7500 feet. The remarkably even character of the great level of the river provinces may be known from the fact that where the Amazon enters B. at Tabatinga, more than 1500 m. in a direct line from the ocean, the river banks are not more than 250 ft. above sea-level. The rock formation of the mountains is chiefly gneiss. Clay-slates are found between the Parana and the Paraguay, and true carboniferous strata occur in the coal basins s. of the tropic. Carboniferous rocks occur, but Jurassic rocks do not appear. Coral reefs occur along the n. coast. The limestones of the upper San Francisco basin contain the celebrated bone caverns which have been described by Lund, the Danish naturalist. In some of these the remains of extinct animals of high antiquity have been found, such as those of the mastodon, mylodon, glyptodon, toxodon, and megatherium; and with these, stone implements and remains of man so buried with the bones of the extinct fauna as to lead to the conclusion that man was contemporaneous with them. There are no signs of recent volcanic action in B., but warm springs are found in several places, saline and alkaline, varying from 88° to 119°, the warmest at an elevation of 6000 ft. above the sea.

In minerals and jewels B. is very rich. Diamonds were found, in 1786, 300 m. n. of Rio, and at later periods in many other sections. The emerald, ruby, sapphire, topaz, beryl, tourmaline (black, blue, and green), amethyst, garnet, rock crystal, chalcodony, opal, agate, and carnelian are more or less plentiful. There are several large coal basins, and also sulphur, saltpeter, and salt. Gold is abundant in many of the provinces, always accompanied by silver. Silver alone was found in large quantities more than 200 years ago. There are rich mines of mercury not far from the capital; and copper, lead, iron, and manganese are also abundant.

The climate of this immense country is naturally widely varied. In the northern lowlands, between the tropics, it is very hot, with but two seasons in the year—the dry and the wet. In the higher lands it is milder, and in the extreme s. the four seasons are tolerably well marked. The wet season lasts from Dec. or Jan. until May or June, with occasional intervals of fine weather. The other half of the year is dry, but not without occasional showers. The amount of water in the wet season is enormous, often producing a rise of 40 ft. in the great rivers, and heavy rains are accompanied with abundant lightning and thunder. At Maranhao the annual rain-fall has been as high as 280 in., while at Rio Janeiro it is but 59 or 60 inches. Temperature is remarkably even, particularly in the Amazon basin. A record kept at Para between 1861 and 1867 showed the annual mean of 80° with extremes of 68° and 95°. The greatest ranges are in the central and southern tablelands and mountain ridges, where the coast temperature is hot and the air humid, while in the interior there may be snow and a little ice. The prevailing winds are the trades from the e., sweeping in the moisture of the Atlantic, and reaching inland along the whole valley of the Amazon to the Andes. These winds greatly mitigate the heat of the dry season. In the interior the course of winds is n. or s., blowing usually toward the sun. Along the ocean the usual interchanging land and sea breezes are of regular daily occurrence. Malarial fevers prevail in some of the low and marshy districts, but, as a whole, B. is a healthy country. There have been epidemics of cholera and yellow-fever; but the ordinary mortality of cities and towns compares favorably with that of European cities.

Vegetation in B. is wonderfully prolific. Except on the loftiest mountains and in some stony districts, the country is luxuriant with vegetable life. In the mountain passes, near the sea-shore, the joint effect of heat and moisture produces a growth beyond man's efforts to restrain. Trees cut and split for fences send forth shoots and branches immediately, and this whether the position of the fragments be that in which they originally grew, or inverted. Along the Amazon the loftiest trees destroy each other in consequence of near proximity. In the province of Maranhao roots of grasses and other plants extending from the shores of pools weave themselves into vegetable bridges, along which the wanderer treads, unaware that he has left solid land until he sees the jaws of a cayman protruding through the herbage beneath him. Along the coast mangroves are numerous and prominent, and so rank is their growth that the seeds begin to sprout before they drop from the parent stem, while the drooping branches strike into the soil and take root. Behind the mangroves come the palms in great variety, while the underwood is chiefly crotons. Brushwood and herbage are seldom seen; everything tends to the gigantic in size. The most varied forms group awkwardly together, crossed and intertwined with leaves. The preponderance of trees with feathery foliage, and glossy, fleshy leaves, lends alternately a tender and luxuriant character to the scene, which in every other respect is painful from its monotony. Cocoa trees, the vanilla, the cinnamon tree, various kinds of pepper, and Brazilian cassia are found. Above the falls of the large rivers the vegetation is generally different; and so is that of the southern pampas or prairies. There are found beautiful flowers, and at intervals groves of small trees growing far apart, while solitary myrtles, fruit trees, and occasionally a cactus add variety to the prospect. The cactus is prolific on the hot steeps of Pernambuco, and the medicinal ipecacuanha flourishes in Terro do Mar.

In the valley of the Paraguay there is a profusion of water plants, in one river so many and so strong as seriously to obstruct navigation. The cocoa tree is in abundance near the sea-shore; Brazil-wood, noted for its dyes and its value as timber, also grows near the sea. Besides these there are the rosewood tree, the trumpet tree, the soap tree, the laurel-pear tree, and abundance of palms. The carnauba palm is one of the most useful trees; every part is valuable, even the wax yielded by its leaves being an article of commerce. More important still is the caoutchouc, or india rubber tree, the gum of which exported from B. annually amounts to more than \$5,000,000. The banana tree furnishes the food of a great portion of the population. Other important fruits are the mango, pine-apple, custard-apple, guava, melons, and nuts.

Although not more than one acre in 200 in all B. is under cultivation, it ranks high as an agricultural country for some articles. The chief productions are coffee, sugar, cotton, manico or cassava flour, tobacco, rice, maize, fruits, and spices. Wheat and flour are imported from the United States.

The varieties of animal life in B. are probably more numerous than in any other part of the globe. Of beasts of prey the jaguar, or South American tiger, is the most formidable; besides this animal there are the tiger cat, the puma, the ocelot, the red wolf, and the Brazil fox or wild dog. Large herds of peccary roam in the forests, where also are tapirs, largest of South American animals. The water hog, abundant on the river banks, is the largest rodent. Various species of deer inhabit the plains. Of edentata there are several species of armadillos, the ant-eater, and the sloth; and of marsupialia there are many kinds of the opossum family all over the country. Of monkeys the variety is surprising; the largest belong to the genus *stentor*, and are known as howling monkeys. The *simia jacchus* is found in no other region. There are many species of bats; while of birds the variety is wonderful, from the ouira, an eagle far larger and more powerful than the most important of European birds of prey, to humming-birds not larger than humble-bees. Among larger birds is the rhea, a species of ostrich. Most birds of B. are noted for beauty of plumage. Red, blue, and green parrots haunt the tree-tops; pigeons in great varieties through the woods; orioles resort to the orange groves; chattering manakins mislead the sportsman; and the metallic tones of the uraponga resound through the forests like the strokes of a hammer on an anvil. The toucan is prized for its feathers, which are of lemon and bright red color, with transverse stripes reaching to the extremities of the wings. One beautiful specimen of the humming-bird has the native name of the "*ewanthe engera*," or "winged flower." Serpents are found in great varieties, the most venomous being the rattlesnake and the jararaca. Others, such as the boa, attain enormous size. There are also many varieties of annoying insects along the rivers; one of them, the puim, so small as to be nearly invisible, inflicting a painful and sometimes dangerous bite. The red ant is a destroyer of vegetation and large districts are sometimes laid waste by its ravages. Spiders attain enormous size, but few of them are venomous. Butterflies are innumerable, and of the most surprising beauty. A dozen varieties of wild bees, most of them honey-makers, have been noted. Caymans and lizards abound. The supply of turtle in the Amazon and its tributaries appears inexhaustible. The sea and the streams abound in fish, among which naturalists have within the past few years found many hundreds of kinds before unknown. One of the largest, the pira rucu, is the principal food of large numbers of people along the Para and the Amazon. The more important domestic animals are the horse, ox, and sheep. Immense numbers of wild horses roam the great southern prairies, found generally in droves of 20 or 30. Cattle also roam wild, and are killed in great numbers for their hides, horns, and tallow, which form a large proportion of the exports of the country.

The population of B. presents a number of distinct types, as well as many varieties blended therefrom. In the eastern or maritime provinces the aboriginal Indians have, to a great extent, become amalgamated with the settled population; but in the great forests and plains of the interior, they are nearly all in a savage condition. In general description the Indians are copper-colored, of medium height, thick-set, broad-chested, and muscular, with small hands and feet, and well-shaped limbs; hair black, thick, and straight; features broad, cheek-bones not generally prominent; eyes black, and sometimes oblique like those of the Chinese; in disposition apathetic and undemonstrative. Though considerably differing in different sections they appear to belong to one original stock, called the Tupi-Guavani. The only tribe that has almost entirely resisted the inroads of civilization is that of the Botocudos (q.v.), living in the forests of the Rio Doce, who are sunk in the lowest barbarism, and are fast dying out. From the mixture of the natives with Europeans, mainly with the Portuguese, are descended the Mamlucos, who first became prominent in raids and conquests in the southern provinces. Negroes, originally from Africa, form a large proportion of the population; and from these and whites have sprung mulattoes of all shades. The B. creoles, who call themselves *Brazileros*, descendants of these mixed races, are little inferior in capacity, physical strength, or intelligence to the true Portuguese. A great social reform was begun by the law enacted in Sept., 1871, providing that after the date of the act all children born of slave parents should be free, and that all slaves belonging to the state or the emperor's household should likewise be free; and the same law set apart an emancipation fund to be applied to the ransom of slaves owned by

private persons. Since that time emancipation has gone on rapidly, the work having been greatly assisted by private philanthropy, and by many of the slaveholders themselves. The importation of slaves was forbidden in 1853, and since then more than a million persons have obtained their freedom. The rapid progress of emancipation after 1871 caused some difficulty in the supply of labor; but the ultimate effect has been to give new avenues for the employment of capital, promote internal improvements, and induce desirable emigration from Europe. Enterprises of all kinds have multiplied, and public instruction has received a vigorous impulse. Until after 1872, when a full census was begun, every estimate of the population of B. had been based upon the official returns of 1817 and 18. In the first census the total was put at 4,396,000; in 1850, a round number, 7,000,000; and in 1860, 8,000,000. In the following table for 1872 the figures for the provinces marked * are estimated on the best available knowledge; those not marked are the census figures:

POPULATION.

PROVINCES.	Sq. Miles.	Free.	Slave.	Total.	CHIEF TOWNS.
Alto Amazonas.....	753,469	56,631	976	56,610*	Manáos.
Grão Pará.....	412,677	232,622	27,199	259,821	Para. or Belem.
Maranhão.....	141,651	284,101	74,939	359,040	S. Luis do Maranhão.
Piauí.....	81,779	178,427	23,785	202,222	Therézina.
Ceará.....	50,262	689,773	31,913	721,686*	Fortaleza.
Rio Grande del Norte.....	20,130	220,959	13,020	233,979	Natal.
Parahyba.....	20,346	341,643	20,914	362,557	Parahyba.
Pernambuco.....	46,257	752,511	89,028	841,539*	Recife.
Alagoas.....	11,642	312,268	35,741	348,009*	Maceió.
Sergipe.....	12,038	139,812	21,495	161,307	Aracajú.
Bahia.....	204,803	1,120,846	162,295	1,283,141	Bahia.
Espirito Santo.....	17,030	59,478	22,659	82,137*	Victoria.
Rio de Janeiro.....	18,490	456,850	270,726	727,576	Rio de Janeiro.
(Municipality of R. J.).....	.....	226,033	48,939	274,972*	(City.)
São Paulo.....	90,541	680,742	156,612	837,354*	São Paulo.
Paraná.....	108,557	116,162	10,560	126,722*	Curitiba.
Sta. Catharina.....	18,924	144,818	14,984	159,802	Desterro.
Rio Grande do Sul.....	110,216	364,002	66,876	430,878	Porto-Alegre.
Minas Geraes.....	237,481	1,642,449	366,574	2,009,023	Ouro Preto.
Goyaz.....	263,373	149,743	10,652	160,395*	Goyaz.
Matto Grosso.....	668,655	53,758	6,607	60,417*	Curyabá.
Totals.....	3,288,110	8,223,620	1,476,567	9,700,187	

The constitution of B., dating from Mar. 25, 1824, establishes four powers in the state—the legislative, the executive, the judicial, and the moderating power, or royal prerogative. Senators are chosen for life at electoral meetings specially convened, each of which nominates three candidates, leaving the choice of them to the sovereign or his ministers. A senator must be of native birth, 40 years old, and must have an annual income of \$800; there are 58 of them, and their salaries are \$1800 per annum. Members of the house, or congress, are elected for four years. The empire is divided into electoral districts, in which every 30 voters select one elector, and the electors, varying in number according to population, nominate a deputy from each district. The house is composed of 123 members. A voter must have an income of (about) \$112; an elector of \$225, and a deputy of \$450 per year. All registered voters must vote, or suffer a penalty. Minors, monks, and servants may not vote; and naturalized foreigners, and persons not of the state religion (Roman Catholic), are ineligible as deputies. The deputies have a salary of \$1200 per annum, besides traveling expenses. Sessions are limited to four months. Each house chooses its own officers, and at the opening and closing of a session both houses sit in a general assembly for the disposal of important business. For ordinary purposes, they sit separately. Taxation, provision for the army and navy, and, if it should become necessary, the choice of a sovereign, originate in the house of deputies. The senate deals with offenses committed by members of the imperial family, and by senators and deputies if committed during the session, and is invested with the right of convoking the legislative assembly should the emperor fail to do so for two months after the period fixed by law. The executive power is in the sovereign, assisted by the ministers and a council of state. The ministers are responsible for treason, corruption, abuse of power, and all acts contrary to the constitution, or the liberty, security, and property of citizens; a responsibility from which they cannot escape on the plea of orders from the sovereign. The executive functions consist in the convocation of the ordinary meetings of the legislative assembly; the nomination of bishops, governors of provinces, and magistrates; the declaration of peace or war, and the general execution and superintendence of all measures voted by the legislature. The moderating power, vested in the sovereign, gives him authority not only to select ministers and senators, but to temporarily withhold his sanction from legislative measures, to convoke extraordinary sessions of the legislative assemblies, to dissolve the chamber of

* There are probably 1,000,000 Indians not taken into account.

deputies, and to grant amnesty and pardon. There are 7 ministries—war, foreign, interior, marine, finance, justice and public works, agriculture and commerce. The ministers are assisted by a council of state consisting of 12 ordinary and 12 extraordinary members, all named by the emperor, and holding office continuously. They are usually ex-ministers. The heir to the throne, if of age, is by right a counselor of state. At the head of each province is a president appointed by the general government; and each province has its local legislature, or provincial chamber, called the legislative assembly of the province. The members of the latter are nominated by the electors who choose deputies to the national assembly, but the members of the provincial chambers are chosen directly by the electors for two years. The power of these provincial bodies over local affairs is analogous to that of the general assembly over affairs of the empire.

The Roman Catholic is the established religion, but all others are tolerated "with the domestic or private forms of worship in buildings destined for the purpose, but without the exterior forms of temples." No one can be persecuted for religious acts or motives. The Roman Catholic clergy are maintained by the state; but funds are also voted for the assistance of other sects. No ecclesiastical decree can have force without permission of the emperor or of the general assembly. Marriages of Protestants celebrated in foreign countries are respected. The empire constitutes an ecclesiastical province of the Roman see, with an archbishop, 11 bishops, 12 vicars general, and about 1300 curates. Public education is in three distinct divisions—primary, secondary, and scientific. The first is gratuitous, and "will become compulsory as soon as the government considers it opportune." Thus far it is very backward.

The trade and commerce of B. have rapidly increased within the past decade. In 1877, there were 1438 m. of railroad open for traffic, and 860 m. in course of construction. Telegraphs, though comparatively new, reported 2890 miles. There were at the close of 1876, 1018 post-offices, and 13,165,000 letters for the year. Weights and measures are those of the French metric system. The standard of value is the gold octava of 22 carats, equal to 4 milreis, or 4000 reis; value at the U. S. mint, \$2.18.

BRAZIL', a city in Clay co., Ind., on the St. Louis, Vandalia, Terre Haute, and Indianapolis railroad, 57 m. w.s.w. of Indianapolis; pop. '70, 2186; in '80, 3530. There are coal and iron mines near the place, and the people are largely engaged in mining and manufacturing. There are six churches, two banks, four weekly newspapers, and a number of good schools.

BRAZIL', ISLAND OF, one of the mythical islands of the Atlantic set down by early cosmographers. The Arabic geography of Edrisi (middle of the 12th c.) describes several such islands, and in Mercator's atlas, 400 years later, the northern Atlantic (now known to be nearly clear of islands) is as full of islands as the sky is of stars. Among these mythical places were the isle of St. Brandon, said to have been discovered by the Irish in the 6th c., of which many wonders were told; the island of Anlilia; the island of the Seven Cities, said to have been the place of refuge of Christians flying from the Saracen conquerors of Spain; the island of Mayda, or Asmaide; and the isle Verde, behind which the inhabitants of the Hebrides imagine they see the sun disappear at setting. None, however, were more famous than the isle of Brazil, the name of which connects it with the red dye-wood of the same appellation. The island was assigned to several places, in one map being attached to the Azores, and finally getting the name of Terceira. The baseless tradition was not finally and officially exploded until the publication of the British admiralty charts of 1865.

BRAZORIA, a co. in s.e. Texas on the gulf of Mexico; 1260 sq.m.; pop. '70, 7527—5726 colored. The International and Great Northern railroads intersect the county. It has a level surface of oak forest and prairie. Agriculture is the main occupation. Co. seat, Brazoria, 48 m. s. of Houston.

BRAZOS, a co. in s.e. Texas, on the B. river; 578 sq.m.; pop. '70, 9205—3759 colored. The surface is undulating and fertile; chief business, agriculture. The Houston and Texas railroad traverses the county. Co. seat, Bryan.

BRAZOS DE SANTIA'GO, a port of entry in Cameron co., Texas, on the gulf of Mexico, 35 m. e.n.e. of Brownsville. It has some foreign and considerable coasting trade.

BREACH OF THE PEACE (*ante*), in general any riotous behavior, or annoying conduct, such as fighting, shouting, disturbing others assembled or singly, etc. In common practice almost any conduct that can be called "disorderly" is in some sense a B. of the P. Unless occasioning some serious revolt, a B. of the P. is only a misdemeanor.

BREAKWATER (*ante*). In the United States the only important work of the kind is at Lewes, Del., at the entrance of Delaware bay. A breakwater was resolved upon in 1828, and the next year the site was fixed at cape Henlopen. In 1870, the engineer reported the completion of the harbor "according to the original project devised more than 40 years ago." In the year after the completion, more than 20,000 vessels visited the harbor, and since its first use in 1833, about 300,000 vessels of all sorts have sought shelter or trade behind the Delaware breakwater. A recent report says: "Let a threat-

ening sky foretell the approaching storm, and a few hours will suffice to fill a previously vacant harbor. Let a north-easterly storm continue a day or two with severity, and the harbor becomes crowded entirely beyond its capacity." Its present capacity is determined by the space that is sheltered by the B. proper. This is a straight line nearly half a mile long, and may be taken as the diameter of a half circle behind it, the area of which will represent approximately the sheltered harbor. North-east of the B. is the ice-breaker structure, a quarter of a mile in length, with an opening of about the same extent, through which the sea rolls without hindrance. Within the past five or six years this important work has been much extended and improved. It is altogether of stone, in rubble-wall and more finished work. There are finished or in construction several B.'s in the northern lakes, for the most part made of timber cribs filled with stone.

BREAST WHEEL. See WATER POWER, *ante*.

BREATH FIGURES. See COHESION FIGURES, *ante*.

BREATHITT, a co. in e. Kentucky; 600 sq.m.; pop. '70, 5652—181 colored; in '80, 7738. The co. is hilly, with forests, and has iron and coal; but the main productions are agricultural. Co. seat, Jackson.

BREBEUF, JEAN DE, b. France, 1593; killed in the Huron country in 1649; a Jesuit missionary who came with Champlain in 1626. His labors were mainly among the Hurons, with whose life and language he became very familiar. When the town of St. Louis was taken by the Iroquois, B. and Lalemont, his associate, were made prisoners and tortured to death. It is said that B.'s head is preserved in the pediment of a silver bust in the convent of the hospital nuns in Quebec. Some of his writings on the Huron language are preserved, and were translated by Albert Gallatin.

BRECKENRIDGE, a co. in n.w. Kentucky, on the Ohio river; 450 sq.m.; pop. '70, 13,440—1682 colored; undulating surface, well watered and fertile. There are some curious sink-holes and caves in the co.; and there are various medicinal springs. Chief productions, agricultural. Co. seat, Hardinsburg.

BRECKENRIDGE, a village in Wilkin co., Minn., on the Red River of the north; the terminus of the St. Paul and Pacific railroad. 217 m. w.n.w. of St. Paul. Steamers pass down the river to Manitoba.

BRECKENRIDGE, JOHN, D.D., 1797—1841; b. Ky.; a Presbyterian minister, graduate of Princeton college. In 1822 he was licensed to preach, and soon afterwards served as chaplain in congress. His first church was in Lexington, Ky., where he established a newspaper, *The Western Luminary*. In 1831 he removed to Philadelphia and was secretary and general agent of the Presbyterian board of education; subsequently professor in Princeton theological seminary; and in 1838 secretary and general agent of the board of foreign missions. He resigned in 1840, and just before his death was chosen president of Oglethorpe university, in Georgia.

BRECKENRIDGE, JOHN CABELL, b. Ky., 1821; studied law in Transylvanian university, and settled at Lexington. He was a member of congress from his state for several terms; and in 1856 was elected vice-president. In 1860 he was nominated for president by the extreme southern section of the Democratic national convention, but, with Douglas and Bell, was defeated by Lincoln. He was immediately chosen U. S. senator, but abandoned his seat and went with the secessionists, where he entered the army and became a maj.gen. In 1865, just before the collapse of the rebellion, he was appointed confederate secretary of war. At the close of the conflict he went to Europe, where he remained several years.

BRECKENRIDGE, ROBERT JEFFERSON, D.D., brother of Rev. John. 1800—71; b. Ky.; at first a lawyer and member of the legislature; but in 1829 he joined the Presbyterian church, and in 1832 became pastor of the first Presbyterian church in Baltimore, where he officiated for 13 years. In 1845, he became president of Jefferson college; two years later removed to Kentucky and became state superintendent of public instruction. In 1853, he was professor of theology in Danville seminary. Dr. B. was a strong old-school leader in the great division of the Presbyterian church. In the slavery discussions he was extreme on neither side, and when the civil war began he was for the union, but he was much opposed to the emancipation proclamation. In 1864, he was president of the convention that nominated Lincoln for a second term. Dr. B. is credited with being the principal author of the common school system of Kentucky. Among his works are *Internal Evidences of Christianity*; *Papism in the United States*; and some books of travel.

BREDA, JAN VAN, 1683—1750; a Dutch painter. He imitated Wouvermans and Breughel so cleverly that connoisseurs are often unable to detect the copy. B. was a long time employed in England.

BREDERO'DE, HENDRIK VAN, Count, 1531—68; one of the sovereign counts of Holland, and a leader against Spanish domination in that country. He was for many years turbulent, active, and a source of annoyance about as much to his own party as to the other. After the complete success of the Spaniards he asked Egmont to intercede for him with the regent; his followers were dispersed, some were put to death, and he himself died in a few months from intemperance and anxiety.

BREDOW, GABRIEL GOTTFRIED, 1773-1814; a German historian and professor in the university of Breslau. English readers know his *Manual of Ancient History*; *Researches on History, Geography, and Chronology*, and *Historical Fables*.

BREECH-LOADING GUNS (*ante*). The introduction of these arms in the United States dates properly from 1865, from which date muzzle-loading arms were no longer manufactured at the Springfield armory. A short time before the late rebellion, the government tested a number of breech-loading guns, such as the Burnside, Cosmopolitan, Gallagher, Joslyn, Merrill, Maynard, Smith, Lindner, and Sharp. None of these are now used except the Sharp gun, which has been adapted to the metallic cartridge. During the war the Spencer rifle was much used by the U. S. cavalry; it has a magazine in the butt of the stock, holding 7 cartridges that are admitted one at a time by the movement of the trigger-guard used as a lever. The shell of an exploded cartridge is expelled by the same movement. It may be used also as a single breech-loader, but the magazine must first be shut off. The Henry gun (not to be mistaken for the Martini-Henry gun) has the magazine under the barrel. By movements of the lever, 17 metallic cases or cartridges can be brought into the chamber in succession. This gun, like the Spencer, can be used as a single breech-loader by shutting off the magazine. It has been changed, however, by O. F. Winchester, and is now termed the Winchester gun. Among other magazine guns may be mentioned the Ball, Fogarty, and Gardner guns. The well-known Remington gun is a single breech-loader, and has an iron receiver that is screwed to the breech of the barrel, in which the breech-block and lock are to be found. It uses metallic-cased cartridges, and has been adopted by the governments of Egypt, Spain, and several other countries. The Remington gun is used in the U. S. navy.

In 1866, the secretary of war called a board of officers, gen. Hancock acting as president, to report the form and caliber which should be adopted for breech-loading muskets and carbines, and the method of converting muskets from muzzle-loading to breech-loading arms. After an examination of 22 different breech-loading muskets and 17 different breech-loading carbines, the board reported the best caliber for muskets to be 0.45 of an inch, the best charge of powder from 65 to 70 grains, and the best weight of ball from 480 to 500 grains. In 1869, a board of officers, presided over by gen. Schofield, was called to meet at St. Louis to select the six best patterns of muskets for infantry and carbines for cavalry. After examining a great number of different breech-loaders, they reported that the only guns suitable for military service were those of the Remington, Springfield, and Sharp systems. These guns were tried accordingly until 1872, when, in compliance with an act of congress, a board of officers, gen. A. H. Terry as president, was appointed to meet in New York and Springfield, "to recommend a breech-loading system for muskets and carbines to be adopted for the military service, which system, when so adopted, shall be the only one to be used by the ordnance department in the manufacture of muskets and carbines for the military service." After testing over 100 breech-loading guns, the board recommended (May, 1873) that the Springfield breech-loading system be adopted for military service, and this report being approved, that system is now used by the government for the U. S. army and militia. This breech-loader has a receiver screwed to the breech of the barrel. The shell of the exploded cartridge is ejected by a combined cam and spring through a motion of the hinge in the opening of the breech-block. The firing-pin goes through the breech-block in an inclined direction from the nose of the hammer at the side to the center of the rear of the chamber, where it strikes the head of the cartridge, exploding the fulminate when its rear end is struck by the hammer.

BREESE, SAMUEL L., 1794-1870: b. New York. He entered the U. S. navy, serving in the war with England and Mexico, but was retired before the war of the rebellion broke out, his rank being rear-admiral.

BREMER, a co. in n.e. Iowa, on Cedar river: 430 sq. m.; pop. '70, 12,528; '80, 14,078; good soil, well watered and timbered. Communication is had by the Cedar Falls and Minnesota railroad. Agricultural productions. Co. seat, Waverly.

BRENDAN, or BRANDANUS, the legendary hero of great ocean voyages made under the protection of angels; revered in Ireland as a saint, where, and in England, he is supposed to have founded religious establishments. His death is set down in 578 A.D.

BRENHAM, the seat of justice of Washington co., Tex., on a branch of the Houston and Texas Central railroad, 72 m. w.n.w. of Houston; pop. '70, 2221; in '80, 4101. It is in a cotton-raising region. There are eight churches, the Live Oak female seminary; an opera house, and a number of manufactories.

BREISACH, NEU, a t. in Alsace, opposite to Old B., 2 m. w. of the Rhine, on the Rhine and Rhone canal; pop. '66, 1981. It was fortified by Vauban by order of Louis XIV.

BREISLAK, SCIPIONE, 1748-1826; an Italian geologist. He was professor in a Roman college, and devoted his leisure to geological researches in the papal states. The king of Naples appointed him professor of mineralogy to the royal artillery, and under his direction the sulphur refining works in the district of Solfatara were erected. In

1798, he published his *Physical Topography of the Campagna*, and followed with various works on similar topics.

BREITMANN, HANS. See LELAND, CHARLES GODFREY.

BRENTON, EDWARD PELHAM, 1774-1839; a capt. in the British navy. He wrote a *Naval History of Great Britain, from 1783 to 1822*. He was the founder of the Children's Friend Society.

BRENTON, WILLIAM, d. Newport, R. I., 1674; an emigrant from England, who held important offices in the colonies of Massachusetts and Rhode Island, being governor of the latter, 1666-69.

BRENZ, JOHANN, 1499-1570; a German reformer under Luther: a writer of great ability and popularity. One of his teachings was that the body of the Lord is everywhere present; hence his followers were called "Ubiquitarians."

BRESCIA, or BRESCIANO, a province in Lombardy, Italy, separated from Verona by Lago di Garda; 1784 sq. m.; pop. '71, 456,023. The n. part is occupied by a chain of the Rhaetian Alps; the remainder, about two thirds of the province, is a part of the great and fertile plain of Lombardy. The rivers are the Oglio, the Mella, and the Chiese, tributaries of the Po. Corn, flax, hemp, grapes, and olives are cultivated. The mountains yield iron, copper, marble, alabaster, and granite. There are manufactures of silk, wool, cotton, linen, iron, steel, copper, glass, and paper. The chief towns are Rovato, Chiara, Orzinovovo, Monte-Chiaro, Salo, and Pontevico.

BRESSANI, FRANCESCO GIUSEPPE, 1612-72; a Jesuit missionary among the Indians of Canada. In 1644, he was sent to the Huron country, but was captured and tortured by the Iroquois. After great suffering he was sent to the Dutch settlements at Albany, where he was ransomed for a large sum. He returned to France, but came back to missionary work and labored many years among the Hurons.

BREST-LITOVSK, a t. in the government of Grodno, Russia, 131 m. s. of Grodno, in 52° 5' n. and 23° 27' e., at the junction of the Mukhovetz and the Bug. It is the seat of an Armenian bishop, who has authority over the Armenians in all the country. It has a varied and extensive trade, by means of the two rivers and the royal canal, in grain, flax, hemp, birch-tar, leather, etc. Pop. '67, 22,493.

BRETHREN, WHITE, a sect of the 15th c. that sprang up in the Italian Alps. Their leader claimed to be Elias the prophet; they were clad in white, and carried crucifixes from which blood appeared to come. The leader, who appears to have left no name, prophesied the destruction of the world, and for a time had great success; but Boniface IX. seized the prophet and burnt him at the stake, and within a year the sect passed out of existence.

BRETHREN AND CLERKS OF THE COMMON LIFE, or OF THE COMMON LOT. See BROTHERHOODS, RELIGIOUS, *ante*.

BRETHREN AND SISTERS OF THE FREE SPIRIT, or SPIRITUALISTS. See BEGUINES, *ante*; and BROTHERHOODS, RELIGIOUS, *ante*.

BRETHREN OF THE CHRISTIAN SCHOOLS, an order established at Rheims in 1679, and sanctioned by Benedict XIII. in 1725, having for its object furnishing the poor with instruction. In Paris, in 1792, they refused to take the oath of obedience to the civil constitution, and were driven from their houses and prohibited from teaching. In 1801, they returned and soon spread over France, Italy, and other countries. About 1830, they opened evening schools for adults. Their chief house is in Paris, and in 1868 they had more than 10,000 brethren, teaching 300,000 persons in France alone. There are a number of them in the United States.

BRETHREN OF THE HOLY TRINITY, a society of the 12th c., in France, whose members were pledged to give a third of their revenues towards the redemption of Christians who were in Mohammedan or infidel slavery.

BRETON, JULES ADOLPHE, a French painter of the present day, excelling in rural life and scenes, for which he has received medals. Among his works are "The Gleaners," "Evening," "Blessing the Grain," "The Weeders," etc.

BRETT, PHILIP MILLEDOLER, D.D., 1817-60; b. New York; a graduate of Rutgers college; ordained in the Dutch Reformed church in 1848, and held pastorates in various places near New York. A volume of his sermons is in print.

BREVARD, a large co. in s.e. Florida, on the Atlantic ocean; 5600 sq. m.; pop. '70, 1216. It is low, flat, and full of lakes and marshes. Along the coast is Indian river, an inlet of the ocean. There is little cultivation and there are no large villages.

BREVET (*ante*), in the U. S. army, a commission giving an officer a nominal rank higher than that for which he has a salary. A great number of these honorary titles were bestowed during and after the civil war.

BREVIARIUM ALARICANUM, a collection of Roman laws compiled by order of Alaric II., king of the Visigoths, in 506 A.D. The chief value of this compilation is that it preserves the first five books of the Theodosian code and five books of the *Sententia Recepta* of Julius Paulus, which are nowhere else found.

BREVIPENNES, or **BREVIPENNATES**, meaning "short-winged," a term for such birds as the ostrich, cassowary, apteryx, and others having very short wings, not fitted for flying. Such birds usually live in solitary places or deserts.

BREWER, a t. in Penobscot co., Me., on the Penobscot river, opposite the city of Bangor, on the Bucksport and Bangor railroad; pop. 3214. It has lumber and leather manufactories.

BREWSTER, **WILLIAM**, 1566-1644; b. England; one of the pilgrims who landed at Plymouth. He went with Bradford to Holland, where he taught school in English, became an elder in the church, and held the same position in New England, though, as he had never been ordained, he always refused to administer the sacraments. He is more generally known in history as "Elder Brewster."

BRIALMONT, **HENRI ALEXIS**, b. 1821; a Belgian engineer and military writer, and member of various learned societies. He has published a number of works on the art and methods of military fortifications, on which he is accepted as one of the best authorities.

BRIA'REUS, or **ÆGEON**, one of the three sons of Uranus and Gaia; the others were Cottus and Gyges, and each of the three had a hundred arms. They assisted Zeus when the Titans made war against Olympus. One account represents B. as assailing Olympus and being defeated and buried under Mt. Etna. As B. is sometimes called a marine deity, it has been thought probable that the hundred arms symbolized the waves of the sea.

BRIBERY (*ante*), in general the same here as in England, and always a crime difficult to prove and more difficult to punish. It is defined as the receiving or offering any improper reward by or to any person, that may in any way relate to the administration of justice, or influence behavior in a matter of official duty, or lead the person to act contrary to the common rules of honesty and integrity. Nearly all the states have special statutes and severe penalties for the offense.

BRICK (*ante*), made in the United States in nearly the same manner as in England. The size varies in various sections from $7\frac{1}{2}$ to $8\frac{1}{2}$ in. long, 4 to $4\frac{1}{2}$ wide, and 2 to $2\frac{1}{2}$ thick, and is therefore smaller than that of English B., which are usually 9 by $4\frac{1}{2}$ and $2\frac{1}{2}$. Philadelphia pressed bricks are in great demand for outer or front walls in consequence of their perfection. Immense quantities of B. are made at Haverstraw and other places on the Hudson river. Excellent fire-brick are made at South Amboy, N. J.; at Athens, on the Hudson; at Chicago, Peoria, and other places. Milwaukee bricks have a pleasing yellowish cream color; and these, with others variously colored in the manufacture, find much favor for outer walls. Bricks are found to stand fire better than stone.

BRIDAINÉ, **JACQUES**, a French home-missionary preacher, 1701-67. Though a strict Roman Catholic in principle, he frequently advocated the cause of the Protestants with great boldness, and displayed personal kindness to many who were suffering persecution. He made more than 250 journeys in all parts of France, and became universally popular. His sermons and spiritual songs, or hymns, have been printed.

BRIDGE (*ante*). The most important American bridge now under construction is that over the East river between the cities of New York and Brooklyn, commonly known as the "Brooklyn bridge." The land approaches are of stone and brick in arches and piers, terminating at the river in the grand stone piers that rise 278 ft. above high water. The following official account of dimensions and progress is down to the close of 1879: construction commenced Jan. 2, 1870; size of New York caisson, 172×102 ft.; size of Brooklyn caisson, 168×102 ft.; timber and iron in caisson, 5253 cubic yards; concrete in well-holes, chambers, etc., 5669 cubic ft.; weight of New York caisson, about 7000 tons; weight of concrete filling, about 8000 tons; New York tower contains 46,945 cubic yards of masonry; Brooklyn tower contains 38,214 cubic yards of masonry; length of river span 1595 ft. 6 in.; length of each land span, 930 ft.—1860 ft.; length of Brooklyn approach, 971 ft.; length of New York approach, 1562 ft., 6 in.; total length of bridge, 5989 ft., or 1.134 m.; width of bridge, 85 ft.; number of cables, 4; diameter of each cable, $15\frac{1}{2}$ in.; first wire was run out May 20, 1877; cable-making really commenced June 11, 1877; length of each single wire in cables, 3578 ft. 6 in.; ultimate strength of each cable, 12,200 tons; weight of wire, 12 ft. per lb.; each cable contains 5296 parallel (not twisted) galvanized steel, oil-coated wires, closely wrapped to a solid cylinder $15\frac{1}{2}$ in. in diameter; depth of Brooklyn tower foundation below high-water, 45 ft.; depth of New York tower foundation below high water, 78 ft.; size of towers at high-water line, 140×59 ft.; size of towers at roof course, 136×53 ft.; total height of towers above high-water, 278 ft.; clear height of bridge in center of river span above high-water, at 90° Fah., 135 ft.; height of floor at towers above high water, 119 ft. 3 in.; grade of roadway, $3\frac{1}{4}$ ft. in 100 ft.; height of towers above roadway, 159 ft.; size of anchorages at base, 129×119 ft.; size of anchorages at top, 117×104 ft.; height of anchorages, 88 ft. front and 85 ft. rear; weight of each anchor plate, 23 tons; total cost of bridge, exclusive of land, \$9,000,000. The bridge will probably be completed in 1882. Engineer, col. W. A. Roebling. The towers were finished long ago; so were the cables, and the construction of the floor, with the many rods suspending it, will finish the bridge proper.

Some other American bridges may be briefly described. One of the earliest of note

is that over the Schuylkill at Philadelphia, which Fanny Kemble poetically described as "a scarf rounded by the wind and thrown over the river." It was accidentally burned in 1838. The railroad bridge at Bellows Falls, built in 1850, has a span of 250 feet. The Susquehanna bridge (of the Wilmington and Baltimore railroad) is 3500 ft. long, with 13 piers and 2 guard piers at the draw. The spans are 250 ft. long, and the draw-span 176 feet. The Niagara Suspension bridge has a span from center to center of towers of 821 ft., and is 245 ft. above the river. The bridge (suspension) over the Ohio between Cincinnati and Covington has a span of 1067 ft. and is 91 ft. above low-water. The Clifton bridge (over Niagara river just below the falls and above the suspension bridge) is 1190 ft. from bank to bank, and 1268 ft. between the points of suspension on the towers, and is 193 ft. above the water. The Victoria tubular bridge over the St. Lawrence at Montreal has a length of tube of 6600 ft., carried over 25 openings of 240 ft. each, and one of 330 ft.; with the approaches this bridge is 9084 ft. long. The Quincy bridge over the Mississippi (draw) has 17 spans, two of 250 ft., three of 200, 11 of 137, and a draw-span of 360 feet. The bridge over the Missouri at Omaha is 2800 ft. long in 11 spans. The bridge of the New York Central railroad over the Hudson at Albany is 1740 ft. long, in 15 spans and a draw. But the most noteworthy of railroad bridges is that over the Mississippi at St. Louis. It is in three immense spans, those at the end being 497 ft. each, and the middle one 515 feet. Over the railroad floor is a carriage and foot roadway 34 ft. wide between the foot-walks which are each 8 ft. wide.

The terrible disaster of the fall of the Tay bridge in Scotland, the center portion of which went down in a furious gale on the night of the 27th Dec., 1879, justifies a brief description of that structure. It was the largest iron bridge in the world, crossing the river, or arm of the sea, a mile and a quarter w. of Dundee, with a length from shore to shore of 10,320 ft. (only 240 ft. less than two miles). Commencing at the s. or Fife shore there were three spans of 60 ft., two of 80 ft., 22 of 120 ft., 14 of 200 ft., 16 of 120 ft., 25 of 66 ft., one of 160 ft., and six of 27 ft.; in all 89 spans, the rails being 88 ft. above the water. The portion which fell consisted of 12 spans somewhere near the middle of the bridge. A train of six passenger cars and the brakemen's van either went down with the bridge or ran into the vacancy in the dark, and not one person survived. There were over 90 lives lost.

The following statement comprises a list of the most important railway bridges and viaducts constructed by European and American railway companies. There are stone, wood, and iron structures, all of which appear under a separate head:

Stone Bridges and Viaducts.—Ballochmoyle viaduct, Glasgow, and S. W., width of span, 181 ft.; viaduct at Nogent, S. M., near Paris, 164 ft.; Durham Junction viaduct, 160 ft.; bridge near Wolmsdorf, Silesia, 150 ft.; bridge near Maidenhead, built by Brunel, 1835, 129 feet. There are three or four structures to be added to the foregoing, whose widths of openings exceed 100 feet. This includes the bridge at the Point-du-Jour, at Paris; the viaduct near Loebau, in Saxony, and the bridge at Point-de-Pille, on the line between Orleans and Bordeaux. The highest arches are principally found in Germany, and in the second line in various parts of France.

Viaducts of Stone and Brick.—Height of arch; over the Goeltz valley, in Saxony, 256 ft.; over the Elster valley, in Saxony, 223 ft.; over the Riofredo, in Austria, 197 ft.; at Diedenmuhle, near Chemnitz, Saxony, 170 ft.; at Chaumont, Paris to Mulhouse, 164 ft.; at Kalte Rinne, Semmering, Austria, 151 ft.; at Fure, near Grenoble, 135 ft.; at Comelle, near Creil, Paris, 131 ft.; at Wagnergraben, Semmering, Austria, 128 ft.; at Combe-Bouchard, Paris-Lyons railway, 128 feet. In addition to these there are several other bridges and viaducts whose height varies from 100 to 125 feet. Among the principal are: the viaduct over the Tranz valley, in Austria; bridge across the river Fulda, near Kragenhof, Hanover; the Goel viaduct at Aix-la-Chapelle; viaduct at Mireville, on the line between Havre and Rouen; four more are in Saxon Switzerland; the rest in various parts of France. The longest viaducts and bridges are to be found in England; notably the viaduct on the line from London to Greenwich; the system of the South-western, South-eastern, Chatham and Dover, Great Eastern, and of other lines serving the metropolis. The next importance attaches to the bridge spanning the Lagoons and running into Venice, the bridge and viaduct over the river Elbe, at Dresden, and a few others.

Timber-built Bridges and Viaducts.—The most prominent structures are the following: Over the river Mista, on the Moscow and St. Petersburg railway, nine openings, each 200 ft. wide; over the river Elbe, at Wittenberg, with 14 openings, varying in width from 140 to 160 ft.; bridge near Woltenhofen, on the road from Lindau to Augsburg, Bavaria, one opening, 170 ft. wide; bridge near Kempten, on the same line as the foregoing, with five openings, varying in width from 85 to 140 ft. each. There are two wooden bridges on the North Shields, Newcastle line, one with seven, the other with five openings, the widest of which spans about 135 feet. The United States possess wooden bridges in very large numbers, and of much greater dimensions than are found on European roads. Among those noteworthy is the bridge over the Delaware river, on the Erie road, with two openings, each of a width of about 260 feet. The next structure of importance is a bridge over the Susquehanna river, near Columbia, with 29 openings, each about 200 ft. wide. There are two bridges crossing the Connecticut river, with spans of 174 feet. These are the most prominent bridges; but there are numerous other

very remarkable structures, which, though of smaller dimensions, give evidence of great engineering skill.

Iron Bridges and Viaducts.—The following list comprises structures of this class of the greatest extent in length:

	Feet.
Parkersburg bridge, West Virginia, U. S.....	7,045
St. Charles bridge, Missouri, U. S.....	6,536
Over the river Ohio, near Louisville, Ky., U. S.....	5,310
Over the river Delaware, Pennsylvania, U. S.....	4,920
Over the East river, New York.....	5,000
Victoria bridge, St. Lawrence river, Canada.....	4,980
Over the river Rhine, at Mayence, Germany.....	3,380
Over the river Tongabudda, Bombay, Madras.....	3,730
Over the river Mississippi, near Quincy, U. S.....	3,200
Over the river Missouri, near Omaha, U. S.....	2,790
Over the river Vistula, near Dirschau, Germany.....	2,750
Over the river Danube, near Stadlau, Austria.....	2,520
Over the river Po, near Mezzano-Corti, Italy.....	2,485
Over the river Tamar, near Saltash.....	2,190
Over the river Lek, near Kuilenburg.....	2,185
Over the river Mississippi, near Dubuque, U. S.....	1,758
Over the river Sorai, in British India.....	1,745

The foregoing comprises a list of the longest bridges constructed of iron, but it does not include all the most important works from an engineering point of view. The bridges which have the widest or the most numerous openings are given in the subjoined list, and comprise all the great marvels which engineering skill and ingenuity have produced: Britannia bridge, Menai straits: four openings, each 460 ft., and two openings, each 230 feet; built by Robert Stephenson and Fairbank, 1846-50. Conway bridge, Menai straits: one opening, 400 feet; built by Stephenson, 1847-48. Victoria bridge, crossing the St. Lawrence river at Montreal: one opening 320 ft., and 24 openings, each 240 feet; built by Stephenson. Bridge over the Garonne, near Langon, on the Bordeaux-Cette line: one opening of 245 ft., and two each of 210 feet. Over the Aire, near Brotherton: one opening of 225 feet. Over the Trent, near Gainsborough, on the Manchester, Sheffield and Lincoln line: two openings, each 150 ft. wide. Over the river Lek, a branch of the Rhine, near Kuilenburg, Holland: one opening of 150 ft., one of 80 ft., and seven of 57 feet: built 1868-70. Over the river Ohio, near Louisville, U. S.: one opening of 400 ft.; one of 370 ft.; six, each of 236 ft.; 14, varying in width from 210 ft. to 140 ft.; one of 100 ft., and two, each of 50 feet; built in 1868. Over the Vistula, near Dirschau, Berlin-Königsberg line—built 1850-57, by Lentze: six openings, 350 ft. each. Over the Waal, near Lommel, Belgium: three openings of 400 ft. each, and eight of 190 ft. each. Over the Rhine, near Griethausen: one opening of 330 ft., and 20 of 60 ft. each; built in 1863-64, by Monie. Over the Rhine, near Hamm: four openings, each of 330 feet; built in 1868-70, by Pichier. Over the Dieppe, near Moerdyk, Holland: 14 openings, each of 330 ft., and two of 51 feet. This structure resembles in a measure the unfortunate Tay bridge. It was completed in 1871. Over the Rhine, near Cologne: four openings of 320 ft. each; built, 1856-60, by Lohse and Wiedman. Over the Nogat, near Marienburg, Baltic: two openings of 312 ft. each. Over the Wye, near Chepstow: one opening of 300 ft., and three, each of 100 feet; built by Brunel, 1850-52. Over the Rhine, near Mannheim: three openings of 295 feet. Over the Boyne, near Drogheda: one opening of 270 ft., and two each of 140 feet; built by Barton, 1855. Over the Danube canal, near Vienna: one opening 260 ft. wide; built in 1860 by Koestlin. Over the Danube, near Stadlau, Austria: five openings each of 250 ft., and 10 each of 110 feet; built by Ruppert, 1868-70. Over the Trent, near Newark: one opening of 240 feet; built by Fox and Henderson, 1851. Over the Thames, Blackfriars: one opening of 205 ft., two of 195 ft., and two of 170 feet; built 1863-64. Over the Kinzig, near Offenburg, Germany: one opening of 190 feet. Over the Eipel, Hungary: one opening of 185 ft., and three of 145 feet. Over the Rhine, near Strasburg: three openings of 185 feet. Over the Grau, in Hungary: one opening of 166 ft., and three of 144 ft. each, built by Ruppert, 1858. Over the Saar, near Freiburg: five openings, each of 160 ft., and two of 142 feet. Crumlin Viaduct, Newport-Abergavenny line: 10 openings each of 160 ft. width; built by Liddle and Gordon, 1853. Over the Lahn, near Coblenz: one opening, 150 ft. wide. Over the Thames, near Windsor: one opening of 200 feet; built by Brunel, 1849. Over the Weser, near Corvey, Germany: four openings, each of 185 feet; built by Schwedler, 1863-64. Over the Orne, near Caen, France: one opening of 145 feet. Built by Maier, 1858. On the Blackwall line: one opening, 120 feet. Over the Tamar, at Saltash: two openings of 450 ft., and 17 openings varying from 70 to 90 feet; built by Brunel. Over the Rhine, at Mayence: four openings, each of 335 ft., six of 115 ft., and 22 openings varying in width from 50 to 80 feet. Over the Isar, near Hesselohé, Germany: two openings, each of 170 ft., and two each of 85 feet. Over the Elbe, at Hamburg: seven openings, each of 335 ft., and three openings of 310 feet; built by Lohse, 1870. Over the Yssel, near Zutphen, Holland: one opening of 320 ft., and two of 55 feet. Over the Ohio, near Benwood, United States: one opening of 320 feet.

Over the Mersey, near Runcorn, London and North-western railway: three openings of 300 ft. each. Over the Missouri, near Omaha, United States: 11 openings, each of 270 feet; built by Dodge, 1860-61. Over the Danube, near Manthausen, Austria: five openings of 260 ft., and two of 90 feet. Over the Danube, at Vienna, North-western line: four openings of 260 ft., and 14 openings of 95 feet; built by Hellwag and Gerlish, 1870-72.

The railway suspension bridge over the Forth at Queensferry will be, when completed, the most remarkable application of the suspension principle in the world. The breadth of the Forth at Queensferry is rather more than a mile; but, as the viaduct is to be continued overland on the n. shore for several hundred yards, the whole length of the bridge will be about one mile and one third. This, however, gives no fair idea of the breadth of span to which the physical conditions require the suspension principle to be applied. In the midst of the firth, but rather nearer to the northern than to the southern shore, rises the rocky islet of Inchgarvie. On either side of this island the bed of the river sinks to a depth which is impracticable for engineering purposes. On the n. side the bed sinks to a depth of 210 ft., on the s. side to 180 ft., below the water-mark; and it is there, for a breadth of 1600 ft. on either side, that no practicable bottom can be found for piers, and therefore that the suspension principle has perforce to be resorted to. Between the deep furrow on the s. side of Inchgarvie and the southern shore there is a reach of comparatively shallow water, with a maximum depth of 30 ft., but within which foundations may be found for some 12 or 15 piers. Viewed in profile from the bosom of the firth, the bridge will thus present to view five distinct sections. First, there is a shallow-water section on the s. side, covering some 2000 ft., and supported on 16 piers; then there is the deep-water section, s. of Inchgarvie, traversed by a suspension bridge; next there is the island of Inchgarvie itself, over which the viaduct will be carried on two or three piers; then there is the deep-water section n. of Inchgarvie, spanned by a second suspension bridge; and, lastly, there is the northern shoreward section, which carries the viaduct on 10 or 11 piers from the brink of the tide to the dead level of the Fife shore. The great features of the architectural design, as seen from the firth, will be the four pairs of lofty towers on which the massive steel chains which are to support the two suspension bridges will be hung, and the two pairs of landward buttresses to which the suspending chains will be anchored. Of the towers, two pairs will rise from the island of Inchgarvie, and will reach the imposing height of 596 ft. Two pairs on the shore of n. Queensferry, and other two on the brink of deep water on the southern channel, will attain to a height of 584 feet. The two pairs of buttresses on the n. and the s. side respectively will be, of course, less lofty; but they will be bold and striking masses of masonry. Those parts of the bridge, n. and s., which rest on piers, with a solid foundation, will consist of a single permanent way 25 ft. broad, and carrying a double set of rails. But the intervening portions carried by the suspension bridges will consist of two distinct and parallel branches, each 15 ft. broad, each carrying a single line of rails, and 100 ft. apart. These branches will be tightly braced together; and this arrangement has been adopted in order to give greater breadth, and therefore greater stability, to the whole structure. Seen from above, the outline of the design has the appearance of a shuttle with elongated points. The divergence of the branches begins at the massive piers, two on each side, to which the suspension chains will be anchored, and the maximum of divergence, 100 ft., will be attained before the lofty towers are reached. While the bridge throughout the greater part of its extent makes necessarily a straight course, the shoreward part at either end forms a gentle curve. From each shore to the beginning of the suspension bridge the line rises with a gradient of 1 in 100. In the shoreward sections, and in that over Inchgarvie, the permanent way rests on the upper members of the lattice-girders; but in the two suspension sections it rests on the lower members. By this contrivance here, as in the case of the Tay bridge, the full height of 150 ft. above the high-water mark is confined to the central sections only. It will be evident that each of the deep-water channels n. and s. of the island of Inchgarvie will be spanned by a double suspension bridge. Each of these double bridges will consist of four parallel and enormous lattice-girders—two for each branch. These girders will be 160 ft. long. Seen in profile, their upper members will form an arched outline, with a maximum height of 50 ft. and a minimum of 19 ft. besides the towers. On these towers, of course, their ends will rest; but they will derive their main support from four immense steel chains, one for each girder, which will be slung over the towers and fastened to the anchoring piers at either end. The girders will be attached to the chains by stout wrought-iron rods at intervals of 50 feet. It is expected that this wonderful bridge will be completed by Jan. 1, 1885.

BRIDGE, NATURAL. See NATURAL BRIDGE.

BRIDGE OF SIGHS the covered passage which connects the doge's palace in Venice with the prison, over which prisoners of state were taken to confinement or to execution.

BRIDGEPORT (*ante*), a city in Fairfield co., Conn., on Long Island sound, and on the New York and New Haven railroad, at its junction with the Housatonic railroad, 56 m. n.e. of New York. The harbor at the entrance of Pequannock creek is large and safe, and is the center of a considerable coastwise trade. The most elegant portion of the city

is Golden hill, an elevation of about 100 ft., commanding delightful views of sound and shore, and covered with fine residences, many of which are owned and occupied by New Yorkers. All of the city is modern and well built, the streets shaded by trees, and the residences are well provided with water and gas. The earliest settlement, then called Newfield, was in 1639; the city charter is dated 1836. In 1850, the population was 6080; now it is about 23,000. There are many superior schools, and some fine churches. The chief business, besides the water trade, is in manufacturing, and in this the making of sewing-machines takes the lead, there being three large establishments. Here is also the largest manufactory of metallic cartridges in the country; and there are carriage factories, iron foundries, harness, and other business.

BRIDGER'S PASS, a defile in the Rocky mountains, in s. Wyoming, through which the overland stages went before the opening of the Pacific railroad. It is several miles long, and in most places has perpendicular side walls from 1000 to 2500 ft. high.

BRIDGETON (*ante*), the capital of Cumberland co., N. J., on the Cohansey river, 20 m. from Delaware bay, 36 m. s. of Philadelphia, at the terminus of the West Jersey and the junction of the New Jersey Southern railroads; pop. '80, 8729. It is a port of entry, the second in importance in the state. Its chief manufactures are glass, water and gas pipes, nails, castings, machinery, lumber, brick, ship-building, woolens, and canned fruits, in which nearly 200 firms are engaged. Among its educational advantages are the South Jersey institute, the West Jersey academy, and several superior select schools. There are a good public library, more than a dozen churches, and several benevolent societies, one of which is for the care of destitute children. There are water and gas works, and three bridges over the river, the town being built on both banks. The climate is excellent, and the surrounding region is exceedingly fertile and well cultivated.

BRIDGEWATER, a township in Plymouth co., Mass., 27 m. n.e. of Boston, on the Fall river and Bridgewater Branch railroads. It contains the state normal school, the state almshouse, and various manufactories. Pop. '80, 3,536.

BRIE, an old district of France between the Seine and the Marne, Meaux being the chief town. B. was and is celebrated for its cheese and grain. In old times a forest covered a great portion of the region. It was subdued by the Franks, and was a part of the kingdom of Neustria. In the 9th c., it was ruled by its own counts, but in 1361 it passed to the crown. The district is now comprised in the departments of Aisne and those adjoining.

BRIEF (*ante*), an abridged statement of a suitor's case. It should contain the names, residences, and occupations of the parties; the character in which they sue or are sued, and why they prosecute or defend; an abridgment of the pleadings; a regular chronological statement in plain language of the facts; a summary of the points at issue and of the proof to be offered, with names of witnesses, or of documents in case of written evidence, etc. The form and nature of the B. is necessarily varied according to the purpose which it is to serve.

BRIER CREEK, a stream in Warren co., Ga., where, in the revolution, the Americans under gen. Ashe were defeated Feb. 27, 1779, by the English under gen. Prevost; American loss about 250; English loss, 16.

BRIES, a t. in Hungary on the Gran; pop. '70, 11,776. The people are stock-breeders and farmers.

BRIGGS, CHARLES FREDERICK, 1810-77; b. Mass.; a journalist and author known as "Harry Franco." He started the *Broadway Journal*, in New York, of which Edgar A. Poe became an associate editor the year following its establishment; and in 1853 he became the first editor of *Putnam's Magazine*, which he conducted for several years. At a later period he was connected with the *New York Times*. Some of his work are *The Adventures of Harry Franco*; *The Haunted Merchant*; and *The Trippings of Tom Pepper*. His latest editorial work was done upon the *Brooklyn Union* and *The Independent*, with the latter of which he was connected at the time of his death.

BRIGGS, GEORGE NIXON, LL.D., 1796-1861; b. Mass.; a lawyer and judge, member of congress, and for two terms governor of Massachusetts. He was for some time president of the Baptist missionary union.

BRIGHAM, AMARIAH, 1798-1849; b. Mass.; a physician who devoted great attention to the cause and cure of insanity. He was superintendent of the retreat for the insane in Hartford, Conn., and of the New York state asylum. While at the latter institution he gave lectures and established the *Journal of Insanity*. Among his works are *Mental Cultivation and Excitement*; *The Influence of Religion upon the Health and Physical Welfare of Mankind*; and *The Anatomy, Physiology, and Pathology of the Brain*.

BRIGHAMIA, plants of the lobelia family discovered in the Sandwich islands. The *B. insignis* bears sweet-scented, showy, and abundant flowers which last for several months. It is a favorite in English conservatories. The juice is said to be a specific for some cutaneous diseases.

BRIGHT, JESSE D., b. New York, 1812. Early in life he settled in Indiana as a lawyer, and became state senator and lieutenant-governor. In 1845, he was elected to the United States senate, where he served 18 years. In 1862, he was expelled from the senate for having written to Jefferson Davis as "President of the Confederate States," recommending to him a man who desired to furnish arms for the rebels.

BRIGHT, RICHARD, 1789-1858; an English physician educated at Edinburgh; practiced with great success in London, becoming physician to Guy's hospital. His specialty was morbid anatomy and the connection between morbid symptoms and alterations of structure of the internal organs. He discovered that an albuminous condition of the urine, accompanied with dropsical effusions, was dependent on a peculiar degeneration of the kidneys, whence the disease in which these conditions occur was called Bright's disease. His publications on this topic were made in 1836-40.

BRIGHTON, a former t. in Middlesex co., Mass., 4 m. w. of Boston on the Albany and Boston railroad; pop. '70, 4957. It is famous as the great cattle-market of Boston and the east. It has besides some manufacturing establishments. Since 1873 it has been a part of Boston.

BRIGITTINES, or ORDER OF OUR SAVIOUR, founded in 1344, as a branch of the Augustinians, by St. Brigida or Brigitta, of Sweden. There were both monks and nuns who inhabited contiguous buildings, but were said never to see each other. Temporal affairs were supervised by the nuns; spiritual by the monks. The northern kingdoms of Europe had monasteries of this order, but the reformation swept them away. Henry V. founded one house near London; Henry VIII. suppressed it; Mary re-established it; and Elizabeth finally suppressed it. There are now no monks of the order. A few convents existed in 1860 in Bavaria, Poland, and elsewhere.

BRILLAT-SAVARIN, ANTHELME, 1755-1826; a French author, deputy in the states-general in 1789; judge of the court of cassation in 1792; the next year mayor of Bellay, but obliged to fly from the revolution. He came to New York, where he lived for three years, teaching French and playing in the orchestra of a theater. He returned to France in 1796, and under the consulate again became a judge. He wrote on political economy, and on the archæology of the department of Ain, but is best known by his *Physiology of Taste*.

BRION, GUSTAVE, b. 1824; a French painter. Among his chief works are "The Potato Harvest during the Inundation," "A Funeral in the Vosges," "A Marriage in Alsace," and "The Sixth Day of Creation." The latter has been exhibited in New York.

BRION, LUIS, 1782-1821; an admiral in the Colombian service, who served in the army of Holland, studied navigation in the United States, and in 1811 was appointed captain of a frigate in the service of Caraccas. Subsequently he fitted out a fleet by his own exertions and drove the Spaniards from the island of Margarita. He was also distinguished in the conquest of Guiana, and at Cartagena and Santa Marta.

BRISTED, CHARLES ASTOR, son of the Rev. John Bristed, grandson of John Jacob Astor, b. N. Y., 1820. He was educated at Yale and at Trinity college, Cambridge, Eng., graduating in 1845. For several years he was a contributor to periodical literature over the signature of "Carl Benson." He was one of the first board of trustees of the Astor library. Among his collected works are: *The Upper Ten Thousand of New York*; *Selections from Catullus*; *Five Years in an English University*; *The Interference Theory of the Government*; and *Letter to Horace Mann*, in which he replied to attacks upon John Jacob Astor and Stephen Girard.

BRISTED, JOHN, 1778-1855; b. England; clergyman and author, who practiced law in New York, and married John Jacob Astor's daughter. In 1829, he became rector of an Episcopal church in Rhode Island. He published *Edward and Anna*, a novel; *The Resources of the United States*; *Thoughts on Anglican and American Churches*, etc.

BRISTOL, a co. in s.e. Mass., bordering on Rhode Island and the ocean, 517 sq.m.; pop. '75, 131,037; in '80, 139,089. It is drained by Pawtucket and Taunton rivers, and has nearly 20 m. of sea-coast. There is considerable agriculture, but the main business is manufacturing of cotton, wool, etc. There are four railroads intersecting the various parts of the county. Co. seat, Taunton.

BRISTOL, a co. in e. Rhode Island, bordering on Mass.; 25 sq.m.; pop. '70, 9421. It has an uneven surface, with some fine scenery, and fertile soil. Two railroads traverse its territory. Co. seat, Bristol.

BRISTOL, a t. in Hartford co., Conn., 18 m. w.s.w. of Hartford, on the Fishkill railroad; pop. 3788; has great clock factories, foundries, machine-shops, etc.

BRISTOL, a t. in Bucks co., Penn., on the Delaware, about 20 m. above Philadelphia, opposite Burlington, N. J.; pop. '70, 3269. It is at the terminus of the Delaware branch of the Pennsylvania canal, and has railroad connection with New York and Philadelphia.

BRISTOL, a t. in Rhode Island, on the peninsula dividing Mt. Hope and Narraganset bays, 16 m. s.e. from Providence; pop. '70, 5302; in '80, 6036. The town is interesting as the site of the residence of king Philip, the great Narraganset chief, who

was slain here in 1676. B. is a port of entry, has a large manufacturing interest, and is much frequented as a place of summer resort. In the revolutionary war it was bombarded by the English, and the greater part of the village was burned.

BRISTOL BRICK, or BATH BRICK, formerly made only in Bristol, Eng., but now made in New Hampshire and other parts of the United States. It is composed of fine-grit sand, and used mainly for cleaning and polishing steel surfaces.

BRISTOW, BENJAMIN H., b. Ky., 1833; practiced law until the commencement of the civil war, when he volunteered and served in the union army, rising to col. On the organization of the department of justice by the federal government he was appointed solicitor-general, and in 1873 he was attorney-general.

BRISTOW STATION, a village in Virginia, 4 m. s.w.s. of Manassas Junction, where two engagements took place during the rebellion—one Aug. 27, 1862, closed by darkness, and indecisive; and one Oct. 14, 1863, when the Confederates, who made the attack, were repulsed.

BRIT, *Clupea minima* (Peck), a species of herring, very small, found in great abundance at certain seasons off the New England coast, where it serves as food for bluefish. It is seldom more than 3 in. long, and is of no importance for the table.

BRITANNICUS, son of the emperor Claudius by Messalina, b. 42 A.D. He was the natural successor to Claudius, but after his mother's execution (when B. was eight years old), Agrippina, the new wife, persuaded Claudius to pass by B. and adopt her son by previous marriage with Lucius Domitius. This son was the emperor Nero; and soon after his accession, Pallas, one of Agrippina's lovers, who had been banished, threatened a revolt, and roused Nero's fear that B. might displace him; so B. was poisoned and died on his fourteenth birthday.

BRITISH AMERICA. See AMERICA, BRITISH, *ante*.

BRITISH BURMAH. See BURMAH, BRITISH, *ante*.

BRITISH COLUMBIA. See COLUMBIA, BRITISH, *ante*.

BRITON. See BRITANNIA, *ante*.

BRITTON, the title of the earliest summary of the laws of England in the French language, purporting to have been written by the command of Edward I. The compiler is unknown.

BRIXEN, a t. of Austrian Tyrol, at the confluence of the Eisack and the Rientz, 104 m. from Vienna by rail. It is a bishop's see, and has a cathedral, several monasteries, a theological seminary, and a gymnasium. There are iron and steel factories in the neighborhood. Nine miles away is the great fort of Franzensfeste, built in 1838. B. is mentioned in 901; it was walled in 1038; was burnt in 1174, 1234, and 1445; in 1519, it was stormed by the French, and in 1525 suffered from the rebellion of the peasants. Pop. '69, 4349.

BROACH, a t. in India. See BAROACH, *ante*.

BROADCAST, a method of sowing grain, which distributes it with some degree of uniformity over the surface. When the sowing is done by hand, the seed is carried in a bag at the left side, and is scattered with the right hand while the sower walks on with measured tread. The seed is afterwards covered with a harrow, or by dragging brush over it. Machines have been devised for sowing grain in this manner. The method of sowing by the drill is preferred by most intelligent farmers.

BROAD CHURCH, the name given to a portion of the church of England which holds a position unidentified with either the High or the Low church party. The High church branch holds rigidly to apostolic succession, maintains the divine right of episcopacy, and in general the sacramental view of the church and the Christian life; of this company are those known as "Ritualists," though not all who are High church would accept the name of Ritualists. (See RITUALISM.) From this section came those known a few years since as "Puseyites." The Low church section recognize non-prelatical bodies of Christian believers as in some sense churches; in doctrine they are mainly Calvinists; they are often called Evangelicals. The Broad church section are the latest of the three divisions, but embrace a large number of churchmen of high cultivation and talent, such as dean Stanley, canon Kingsley, Maurice, and others of note. The tendency of the Broad church leaders is towards a liberal view both of Christian doctrine and church organization. Yet the High on the one hand, the Low on the other, and the Broad between the two subscribe to the same formularies, which they interpret in differing senses, and from which they deduce opposite results. It should be understood that these names are used only colloquially for popular convenience, and are not accepted in either England or America as legitimate designations. They show tendencies.

BROADCLOTH. See WOOLEN and WORSTED MANUFACTURES, *ante*.

BROADDUS, ANDREW, D.D., 1770-1848; a Virginian; a Baptist preacher, compiler of the *Dorer Selection* and *Virginia Collection* of hymns, and a popular pulpit orator. Some of his sermons have been published.

BROAD MOUNTAIN, in the coal region, Carbon and Schuylkill cos., Penn. It is about 2000 ft. high and extends for 50 m. n.e. and s.w.

BROAD RIVER, a stream of North and South Carolina rising in the Blue Ridge, and joining with the Saluda, forming the Congaree. The city of Columbia is at the junction of the two rivers. The country around B. R. is exceedingly fertile and productive.

BROADSTAIRS, a t. in England $1\frac{1}{2}$ m. s. of North Foreland and 3 m. from Margate. It has a small pier built early in the 16th c., and an archway leading to the shore built in 1540. Near the pier is a chapel to the Virgin, in honor of which ships were once accustomed to furl their topsails as they passed. B. is a place of summer resort. Pop. '71, 1926.

BROAD TOP MOUNTAIN, in Bedford and Huntingdon cos., Penn., 2500 ft. above the sea. It has large beds of bituminous coal.

BROADUS, JOHN ALBERT, D.D., LL.D., b. Va., 1827; educated in the university of Virginia; pastor of the Baptist church in Charlottesville, and in 1859 professor of New Testament interpretation and homiletics in the Southern Baptist theological seminary in Greenville, S. C. Dr. B. is proficient as a Greek scholar. He has published, among other papers, *The Preparation and Delivery of Sermons* and *Recollections of Travels*.

BROCCHI, GIOVANNI BATTISTA; an Italian geologist, 1772-1826. He studied at Pisa, and was professor of botany in 1802 at Brescia, but devoted himself chiefly to geology. In 1808, he was made inspector of mines for Italy. In 1823, he went to Egypt, and two years after Mehemet Ali made him one of a commission to organize for the conquest of Sennaar. B. fell a victim to the climate at Khartoom. Among his works are *Treatise on the Iron Mines of Mella*; *Essay on the Physical Constitution of the Metalliferous Mountains of the Valley of Trompia*; *Mineralogy of the Valley of Fassa and the Tyrol*; *Fossil Geology of the Apennines*, etc.

BROCK, SIR ISAAC, an English gen. killed in the battle of Queenstown, Canada, Aug. 16, 1812. Not long before, he had captured gen. Hull (suspected of treason) and his forces. There is a monument to his memory on the w. bank of the Niagara river.

BROCKETT, LINUS PIERPONT, M.D., b. Conn., 1820; graduated from Yale medical college in 1843. After a few years he left medical practice for literature, and has written for the *New American Cyclopaedia*, etc. Among his separate works are *Our Great Captains*; *Woman's Work in the Civil War*; *Woman, her Rights, Wrongs, Privileges, and Responsibilities*; and *Epidemic and Contagious Diseases, their History, Symptoms, and Treatment*.

BROCKPORT, a village in Monroe co., N. Y., on the Central railroad and Erie canal, 18 m. w. of Rochester; noted for manufactures, especially of pumps and agricultural machines. There is a state normal school here.

BROCKTON, a t. in Plymouth co., Mass., on the Old Colony railroad, 20 m. s. of Boston; pop. '80, 13,605. The manufacture of boots and shoes is the chief industry.

BRODERICK, DAVID COLBRETH, 1818-59; b. Washington; an energetic uneducated man, who became a political leader in New York city, and was elected to congress. In 1849, he went to California, and in 1856 was chosen United States senator. In consequence of some plain words, B. was challenged by David S. Terry, a judge of one of the state courts, and fell in the duel which followed.

BRODERIP, WILLIAM JOHN, 1787-1859; an English writer on natural history. He studied law, practiced, edited law reports, and was for 34 years a metropolitan police magistrate; but his leisure was devoted to science, and he was a member of most of the important societies, contributed to their *Transactions*, and promoted especially the study of zoology, being many years vice-president of the zoological society. Much of his scientific writings appeared in *Fraser's Magazine*.

BRODHEAD, JOHN ROMEYN, LL.D., 1814-73; b. Philadelphia; a graduate of Rutgers college, and a student at law, but after brief practice he turned his whole attention to American history, especially that concerning the early settlement of New York. In pursuit of this object, while connected with the United States legation in Holland, he thoroughly searched the archives at the Hague and elsewhere in that country, and in England and France. His great labor was rewarded by the collection of more than 5000 documents, more or less important, of which many had until then been unknown to historians. These papers were printed by the state of New York in several large folio volumes. In 1846, B. was secretary of legation in London, where he wrote the greater part of his *History of the State of New York*, the last volume of which was published in 1871. From 1853 to 1857 he was naval officer of the port of New York. He was a leading member of the New York historical and other learned societies in this country and abroad.

BROGLIE, ACHILLE LÉONCE VICTOR CHARLES, Duc de, 1785-1870; a peer of France. The family was Piedmontese, but won distinction in the armies of France. The first marshal de B. served under Louis XIV.; his son reached the highest grade of the French peerage; the second marshal commanded in the seven years' war, was made

a prince of the empire, and by Louis XVI. made commander-in-chief. He refused to serve under Napoleon, and died in voluntary exile. His son followed Lafayette to America, but soon returned, served on the staff in the republican army of the Rhine, was denounced, arrested, and guillotined, June 27, 1794. His injunction to his son (the subject of this sketch, then but 9 years old) was to remain faithful to liberty even though she were ungrateful and unjust. "His father murdered, his mother in prison, his property confiscated and plundered, the young de Broglie first appears in life in wooden shoes and a red cap of liberty, begging an assignat from the younger Robespierre." Yet he adhered to the cause for which his father died, and maintained through life the principles of 1789, seeming to have forgotten even his rank until reminded of it by a summons to the chamber of peers. Early in life he was one of Napoleon's council of state. With high rank, independent fortune, unblemished integrity, unflinching patriotism, and a sincere and consistent attachment to liberal opinions, B. entered the chamber in 1815, just before he was 30 years old. His first opportunity was on the trial of marshal Ney, and he alone had the courage to speak and vote for acquittal on the ground that the marshal was not guilty of premeditated treason. During the restoration he was active in the defense of liberal opinions and measures, opposing the reactionary policy of the court, and acting with the doctrinaires, of whom Guizot was the ablest representative. In 1816, he married Mme. de Stael's daughter. About the same time he became an ally of Clarkson and Wilberforce in the cause of the emancipation of negroes from slavery. In Louis Philippe's first cabinet he reluctantly took the bureau of public worship, and in 1832, upon strong urging, became Cassimir Perier's successor as minister of foreign affairs, in which office he strengthened the bonds between France and England, negotiated the quadruple alliance, assisted in settling the Belgian and Greek questions, and labored with success to preserve the peace of Europe. In 1825, he was the head of the cabinet, and, riding beside the king when Fieschi's attempt at regicide was made, B. received one of the bullets through his coat collar. He retired permanently from public life in 1836. Though not in office, B. preserved through life close personal and political friendship with Guizot. The overthrow of the constitutional monarchy in 1848 was a severe blow to the duke; but he consented to sit in the republican assemblies, and labored to counteract some of what he deemed to be the evils of universal suffrage and to avert the *coup d'état* which he saw was impending. When it came he was conspicuous as one of the bitterest enemies of the imperial regime, though he admitted that an empire was "the government which the poorer classes of France desired, and the rich deserved." His last 20 years were devoted to philosophical and literary pursuits. With regard to the future, he said: "I shall die a penitent Christian and an impenitent liberal." He was a member of the academy and other societies, in whose labor he took assiduous interest. He was succeeded by Albert de B., his eldest son, also of literary distinction, who has had a prominent part since 1871 in the national assembly, and was for some time the head of marshal MacMahon's cabinet.

BROGLIE, ALBERT, Duc de, son of Achille, b. 1821; statesman and author, elected a member of the academy in 1862. His main work, *The Church and the Roman Empire in the Fourth Century* has passed through several editions. He has also published Leibnitz's *System of Religion; Questions of Religion and History*, etc. M. Thiers made him minister of foreign affairs, and ambassador to Great Britain.

BROHAN, JOSÉPHINE FÉLICITÉ AUGUSTINE, b. 1824; a French actress, excelling specially in the higher dramas, such as those of Moliere, Beaumarchais, and Victor Hugo. She has also produced some pieces of her own. On the death of Rachel she took the great tragedienne's chair in the conservatory. Her two sisters are well known on the stage; Susanne, and Emilie Madeleine.

BROKE, Sir PHILIP BOWEN VERE, 1776-1841; an English admiral of the war of 1812; he commanded the *Shannon*, and sent a challenge to fight to the American capt. Lawrence, just promoted to the command of the *Chesapeake*. Before the latter arrived, Lawrence, who thought the mere appearance of a British vessel to be a challenge, went out to meet him. An action ensued, June 1, 1813, in sight of the land off Boston. Lawrence was almost immediately mortally wounded, and his badly supplied and badly manned vessel was captured. The victory raised B. to knighthood.

BROKER (ante). In the United States, brokers are classed according to the nature of their business. In general, the word means a dealer in money or stocks; but besides the bill and note broker there are exchange, insurance, cotton (and other merchandise), pawn, real estate, and ship brokers. The B. is paid by a commission on his sales, or by a special agreement. Usually brokers do not disclose the names of their principals. There is an implied warranty in dealing with a broker that the thing he sells is all that it pretends to be, and if a bill sold be found a forgery, he is held responsible.

BROME, a co. in the province of Quebec, Canada, on the Vermont border; 350 sq. m.; pop. '71, 13,757. The Green mountains occupy a portion of the county. Capital, Knowlton.

BROMIDES, the salts of bromine combined with various radicals, such as potassium, sodium, iron, mercury, and others. Alkaline B. crystallize in cubes or right angled prisms, and are easily soluble in water. Bromide of potassium is a universal

somnific. and is taken in doses of 20 to 60 grs., or even more. B. are said to be useful in epilepsy.

BROMLEY, a t. in England, 10 m. s.e. of London, on high ground n. of the Ravensbourne river. Besides modern institutions there is a college founded in 1666, by bishop Warner, for the residence and support of widows of clergymen. There is also a palace for the bishop of Rochester, to whom the manor has belonged since the time of Ethelbert; and in the garden attached is St. Blaize's well, which was of great fame before the reformation. Pop. of parish in '71, 10,674.

BROMOFORM, the ter-bromide of formyl, analogous to ido-form and chloroform; a heavy, volatile liquid; syn. CHBr_3 .

BRÖNDSTED, or **BRÖNSTED**, **PETER OLUF**, 1781-1842; an archæologist, b. in Jütland. He was educated in the university of Copenhagen, and with his friend Koes joined baron Stackelberg's expedition to Greece, where they made important antiquarian researches, and B. as a reward for his share was made professor of Greek in the university of Copenhagen. This professorship he exchanged for the office of Danish envoy at Rome. In 1832, after visiting France, England, Sicily, and the Ionian islands, he returned to Copenhagen and was made director of the royal museum of antiquities and professor of archæology and philology, and ten years later was appointed rector of the university. His death was in consequence of falling from his horse. His principal work was *Travels and Archaeological Researches in Greece*.

BRONNER, **JOHANN PHILIPP**, 1792-1865; a German authority on wines, their nature and production, on which he published more than a dozen treatises. In 1831, he established a school for teaching wine-culture; and in later years, under a commission from Baden, he traveled and investigated in all the grape-growing countries of the continent.

BROOKE, a co. in West Virginia, in the "Panhandle"—a narrow strip between Ohio and Pennsylvania; 75 sq.m.; pop. '70, 5464. Surface hilly, soil fertile; productions agricultural. The Pittsburg, Cincinnati and St. Louis railroad passes through it. Co. seat, Wellsbury.

BROOKE, **FRANCIS J.**, 1763-1827; a Virginian, an officer in the revolutionary army, speaker of the Virginia senate, and presiding judge of the court of appeals.

BROOKINGS, a co. in s.e. Dakota, on the border of Minnesota and Big Sioux river, 750 sq.m.; pop. '70, 163, of whom 145 were Indians. There are several large streams and many lakes in the territory.

BROOKITE, a mineral of pure native titanite anhydride. It is found in Perthshire, Scotland. A kind found in the Ozark mountains is known as *arkansite*.

BROOKLIME, a European plant growing in wet places, used in salads in England and sometimes sold with water-cresses. There is a similar plant in the United States bearing the same name.

BROOKLINE, a village and township in Norfolk co., Mass., on the Charles river, s.w. of Boston, and on the Boston, Hartford and Erie, and the Boston and Albany railroads. B. is a favorite place of residence for persons doing business in Boston, and a part of the town was annexed to that city in 1870. There is a fine town-house, a good public library, and some notably beautiful churches. Communication with Boston is made also by horse railroads. Pop. about 7000.

BROOKLYN (*ante*), the capital of Kings co., N. Y., with 554,696 inhabitants; comprising, under the act of consolidation which went into effect Jan. 1, 1855, Brooklyn, Williamsburg, Green Point, Wallabout, Bedford, New Brooklyn, Bushwick, Gowanus, and South Brooklyn; situated in the northern part of Long island, embracing an area of 16,000 acres, or 25 sq. miles. The city is 8 m. long, with a breadth from 2 to 5 m., averaging $3\frac{1}{2}$ m.; it has a water-front on the East river and bay of New York, $8\frac{1}{2}$ m. in length; is bounded on the n. by Newtown creek; on the s. by the towns of New Lots, Flatbush, and New Utrecht; on the e. by the Queens co. line; and on the w. by the East river and bay of New York. The s. and e. borders are occupied by a broad range of low hills extending into Queens county. Along the shore opposite the lower point of New York, is an irregular bluff known as the "Brooklyn Heights," on which are many handsome residences; it has a very picturesque appearance, especially when viewed from New York, while the rays of the setting sun fall upon the houses. A large portion of the southern part of the city is low and level. Its water-front is entirely occupied by wharves and warehouses. Williamsburg, now called Brooklyn, E. D. (eastern district), includes the thickly-settled portions n. of the Wallabout bay, contains a large number of manufacturing establishments, and has its entire water-front devoted to commercial purposes. Greenpoint lies between Bushwick and Newtown creeks, and occupies the extreme north-western part of the city; it contains large ship-yards and manufactories. South B., lying s. of Atlantic street, has an extensive water-front, and contains large wood, coal, stone, and lumber-yards, numerous planing-mills, distilleries, breweries, plaster mills, foundries, and machine-shops. B. is connected with New York by 13 steam ferries, and the Annex boats leave the foot of Fulton street every 20 minutes for Jersey City

and Hoboken. With the remoter part of Long island it is connected by the Long Island and the South Side railroads, and with Coney island, a popular seaside resort, at the s. w. extremity, by a number of steam-car lines during the summer season, while some 26 lines of city railroads, using horse-power, radiate from the ferries to the bounds of the city in every direction. An elevated railroad, on the plan of those erected recently in New York, is now in course of construction, to extend from Fulton ferry to East New York, a post village of New Lots township, on the Long Island railroad; a distance of $5\frac{1}{2}$ miles. The East river bridge, to connect B. with New York, is described under the article BRIDGES. The estimated cost of the bridge is \$13,708,026, and the expenditures up to 31st Dec., 1879, were \$11,216,431, of which amount the city of New York contributed its quota of \$3,800,000. B. is well supplied with pure, soft water, derived from Hempstead hook, Valley, and Springfield creeks; is thoroughly lighted by gas companies; has a large and efficient fire department; and its sanitary and police matters are cared for by the metropolitan boards of health, of excise, and of police, respectively. The total number of deaths registered by the board of health in the 11 months ending Nov. 30, 1879, was 10,651, representing an annual death rate of 20.57 in a thousand. During the same year there were registered 2898 marriages and 9013 births; there were 23,441 arrests; the number of buildings completed was 1128, and 399 were in course of erection. The assessed valuation of taxable property for 1879 was \$232,925,699, and the annual tax levy, \$5,929,629, making the average rate of taxation \$2.55. The city debt is \$37,565,369.89. The city government consists of a mayor, controller, auditor, treasurer, corporation counsel, tax collector, registrar of arrears, 3 commissioners of city works, 3 commissioners of police and excise, 3 commissioners of fire and buildings, and a board of health; and each of the 25 wards is represented in the board of aldermen. The report of the board of education shows that during the school year ending Sept. 30, 1879, the number of licensed teachers employed in the public schools was 56 males and 1346 females. The whole number of children of school age who attended the 60 public free schools of the city was 98,823.

B. has a number of parks: Washington park occupies the site of Fort Greene, of revolutionary fame; Carroll park is very tastefully laid out; but its chief pleasure-ground, and one of the most superb in the country, is Prospect park, the construction of which was begun in 1866; it now covers, with the adjoining parade-ground, 550 acres. The site is one full of natural beauty: magnificent views, fine forest trees, a fertile soil, and numerous lakes lend to the spot all the charms of rural scenery. Upon the plaza at the main entrance is a magnificent fountain and a bronze statue of Abraham Lincoln. Twenty-five acres have been set apart for zoological gardens, and there is a fine observatory on Lookout hill. There are 11 m. of walks, and 10 m. of roads for driving and riding purposes. The cemeteries of B. are widely known: Greenwood, Cypress Hills, and the Cemetery of the Evergreens, are the principal, while there are several of smaller size and note. In Greenwood are interred about 175,000 bodies, and there are over 2000 monuments; the ground inclosed is 413 acres, situated on Gowanus heights, in the s. part of the city.

The U. S. government bought the site now occupied by the navy-yard, for \$40,000, in 1801, but by subsequent purchases has become the owner of about 200 acres in the neighborhood. The navy-yard occupies nearly 50 acres, inclosed by a high brick wall, and is situated on the s. shore of Wallabout bay. The Directory credits B. with 274 churches, which would seem to justify the appellation of "the city of churches." Of this number there are: Baptist, 27; Congregationalist, 23; Presbyterian, 27; Protestant Episcopal, 36; Reformed church, 15; Lutheran, 14; Methodist Episcopal, 39, besides 7 churches for colored members; Roman Catholic, 42, and the Jews have 6 synagogues. We are limited to a simple reference to a few of the more prominent churches. "St. Ann's on the Heights" is a fine Episcopal church; the general style of its architecture is the middle-pointed gothic. The church of the Holy Trinity is built of brown stone, in the Gothic style, and has a spire 275 ft. high; it is one of the handsomest churches in the country. St. Paul's is constructed of rough-hewn blue granite and sandstone, in Gothic style; it has a front of 75 ft., a depth of 145 ft., and is 67 ft. high in the nave. The church of the Pilgrims is built of gray stone, and inserted in the main tower is a piece of the Plymouth rock: its pastor, Dr. R. S. Storrs, is a noted pulpit orator. Plymouth church, a plain brick building on Orange street, has accommodations for seating 2800 persons, and contains what was until recently the largest church organ in America; Henry Ward Beecher has been its pastor for the last 33 years, and the desire to hear him preach is so great that many pew-holders generously give up their seats to strangers for the evening service. The amount offered for pew-rents during the year 1880 was over \$40,000. A Roman Catholic cathedral is in process of erection on Lafayette avenue, between Carlton and Vanderbilt avenues; it will be a very large and imposing structure. The "Tabernacle" is on Schermerhorn street; the exterior is of brick, with stone trimmings, and the interior is well arranged for seating a large audience; the plan is a large semicircle, the organ in the center of the straight side, with the pulpit immediately in front, giving the speaker command of the entire building; a spacious gallery runs around the entire auditorium. A door at the end of each aisle opens into a wide hall, so that in case of fire the church can be emptied in a very short time; its pastor is the well-known Rev. T. De Witt Talmage. There are nearly 200 private schools

and educational institutions in B. Among these are several whose names have now a national reputation. Such are the Packer collegiate institute, and the Brooklyn heights seminary for young ladies; the Adelphi academy, the Collegiate and Polytechnic institute for boys, and the juvenile high-school. Among the principal buildings are the city hall, the Kings co. court-house, costing, with the adjacent grounds, \$1,200,000; the Kings co. savings-bank, the church charity foundation, the new B. orphan asylum, the college of St. John the Baptist, the art building, the academy of design, and the Long Island historical society, now being built of terra-cotta, at the corner of Clinton and Pierpont streets. The academy of music, on Montague street, was built in 1860, costing \$206,000; it contains seats for 2300 persons; is built of handsome brick with Dorchester stone trimmings; 232 ft. long, 92 ft. wide, and 56 ft. high. Opposite is the B. library, a handsome model of what the home of a library ought to be. The building was completed in 1867, at a cost of \$227,000; the library now numbers 58,000 volumes, and Mr. S. B. Noyes, the librarian of the institution, has the credit of organizing a catalogue system that has been highly praised for its thorough and convenient method of reference. The Kings co. penitentiary is on Nostrand avenue; its expenses for 1879 were \$101,171.75; its earnings, \$92,917.04; and it contained 2000 prisoners. The two principal theaters are the Park theater, on Fulton street, opposite the city hall park, and the Brooklyn theater, corner of Johnson and Washington streets, on the site of one which was destroyed by fire Dec. 6, 1876, causing the death of over 300 persons; the new structure has proper means of exit, and is called Haverly's Brooklyn theater. There are 21 hospitals, dispensaries, and infirmaries, besides numerous other benevolent institutions. Among these are the Long Island college hospital, St. Mary's and St. Peter's hospital, the female orphan asylum, the marine hospital, and the Graham institution for the relief of aged women.

B. is the headquarters of the 2d division of the national guard of the state of New York, consisting of the 5th and the 11th brigades; this force consists of the 13th, 14th, 23d, 32d, and 47th regiments of infantry, 3 troops of cavalry, and 3 batteries of artillery.

The streets, with the exception of Fulton street, the principal thoroughfare, are generally straight, have a width of from 60 to 100 ft., and cross each other at right angles. Myrtle and Atlantic avenues are, next to Fulton st., the most active business thoroughfares, and contain many stores that carry on a large trade. The large number of persons who reside in B. and do business in New York has caused the city to be termed facetiously a "big bedroom;" in fact, although its own industrial and commercial activity is very great, by far the larger part of the city is devoted to private dwelling-houses. Clinton avenue is beautifully laid out with handsome residences surrounded by ornamental grounds, and it would be difficult to find in any city a street more attractive of its kind. From a point between the Catherine and Fulton ferry slips to the Gowanus district extends along the entire river front an almost unbroken line of storehouses. The Atlantic dock warehouses of South Brooklyn opposite Governor's island cover a space of 20 acres, and inclose a basin 40 acres in area. Here most of the grain brought from the west is handled, stored, and transhipped. The capacity of the grain warehouses is estimated at 12,000,000 bushels; and about 25,000 vessels, exclusive of canal boats and lighters, are said to be annually unloaded. The principal articles are molasses, sugar, grain, coffee, oil, hides, and wool. The annual storage of merchandise in B. is valued at \$261,000,000. Among the numerous manufacturing establishments of B. are the following: Prentice's hat factories; the Brooklyn brass and copper company; the New York agricultural works; the American steel company's works; the printing house and book manufactory of D. Appleton & Co.; the great sugar-refineries of the eastern district; Peter Cooper's glue factory; Kalbfleisch's chemical works, etc.

The first settlement of Brooklyn, formerly Breuckelen, dates from 1636, when a few Walloon colonists took up their residence on the spot that still bears the name of Wallabout. English and Dutch settlers followed; and in 1667, a patent or charter was granted to the town by governor Richard Nicholls. The first church had been erected the previous year. In 1693, the population amounted to only 509 persons, of whom 65 were slaves. In 1776, the site of the present town was the scene of the battle between the Americans and the British, usually known as the battle of Long Island. In 1816, Brooklyn was incorporated as a village, and in 1834 it became a chartered city. Williamsburg attained the rank of a village in 1827, and was recognized as a city in 1851. The population of B. was in 1800, 3298; in 1820, 7175; in 1830, 15,292; in 1840, 36,233; and in 1850, 96,850. In 1860, after its consolidation with Williamsburg, the population had increased to 266,661; in 1870, to 296,099; in 1875, to 482,493; and according to the U. S. census of 1880, B. has 554,696 inhabitants.

BROOKS, a co. in s. Georgia bordering Florida; 550 sq.m.; pop. '70, 8342—4231 colored. The Atlantic and Gulf railroad intersects. Productions, cotton, corn, etc. Co. seat, Quitman.

BROOKS, CHARLES TIMOTHY, b. Mass., 1813; graduated from Harvard, and in 1837 settled in Newport as a Unitarian minister. Most of his time was devoted to literature, especially to German translations. He published Schiller's *William Tell*; *Homage to the Arts*; *German Lyrics*; *Songs of the Field and the Flood*; a translation of Goethe's *Faust*;

and many less important works; besides a volume of sermons, various poems, and a prose romance.

BROOKS, ERASTUS, brother of James, b. Maine, 1815; graduated at Brown university, and became teacher of a grammar school and editor of the *Haverhill Gazette*. In 1836, he was a Washington correspondent for several papers, and soon after became associated with James in the New York *Express*, where he remained as assistant and as chief editor until about 1877. He was a leader in the American party, and their candidate for governor of New York (but not elected) in 1856. He was in the state senate of 1856, where his advocacy of the bill to divest Roman Catholic bishops of their title to church property involved him in a controversy with bishop Hughes, which at the time attracted much attention. Mr. B. has been for several terms in the legislature.

BROOKS, JAMES, 1810-73; b. Maine; a journalist and politician. He graduated at Waterville college, and was principal of a Latin school in Portland; became a writer of letters to various newspapers, and originated the idea of regular correspondence from Washington. As a member of the Maine legislature in 1833, he proposed a survey for a railroad from Portland to Quebec or Montreal. In that year he made a tour of Europe on foot, sending his observations to the *Portland Advertiser*. In 1836, he established the *New York Express*, published both morning and evening, which still survives as a prominent evening newspaper. In 1847, he was a member of the state legislature, and in 1845 was elected to congress. During the native-American excitement, 1841-44, his paper was strongly in favor of that party. In 1850, he favored the compromise measures of Henry Clay, and after the outbreak of the civil war he left the party with which he had been so long identified, and was immediately returned to congress by the democrats. In 1871, after a rapid trip abroad, he published *A Seven Months' Run Up and Down and Around the World*.

BROOKS, JOHN, M.D., 1752-1825; an American patriot who, on hearing of the affair at Lexington, marched to the place from Reading with a company of minute-men just in time to see the British in retreat. He served in the war, and was frequently promoted. After the peace, he resumed the practice of medicine at Medford, and in 1816 was elected governor of Massachusetts, and re-elected annually until 1823, when he refused to be longer a candidate.

BROOKS, MARIA GOWEN, 1795-1845; b. Mass.; an American poetess, by Robert Southey called "Maria del Occidente." She lost her father when young, and was protected and educated by her future husband, a Mr. Brooks, a merchant of Boston. After his death, she went to Cuba, and in 1830 visited London and Paris. Some of her works are *Judith, Esther, and other Poems; Zophiel, or the Bride of Seven; Idomen, or the Vale of Yumuri; and Ode to the Departed*.

BROOKS, PETER CHARDON, 1767-1849; a successful business man of Massachusetts; in boyhood on a farm; engaged in marine insurance in Boston, where he made a fortune; for several years president of the New England insurance company. After retiring from business, he was active and liberal in benevolent enterprises. As a member of the legislature he did what he could toward the suppression of lotteries.

BROOKS, PHILLIPS, b. Mass., 1835; graduate of Harvard, and from 1859 to 1870 rector of Episcopal churches in Philadelphia; in the latter year becoming rector of Trinity church, Boston. He is celebrated as a pulpit orator, and as a vigorous and independent thinker. His freedom from the ordinary sectarian trammels, his liberal views of doctrine, with his profound convictions as to vital Christian truths, and his deeply spiritual yet intensely practical preaching, give him great popular power.

BROOKS, PRESTON S., 1819-57; graduate of South Carolina college; was in the state legislature, and served in the war with Mexico. In 1853, he was a member of congress, and was re-chosen in 1854. May 22, 1856, he assaulted senator Sumner, striking him over the head with a cane while in his chair in the senate chamber, and severely injuring him. The house of representatives did not expel him, though a committee reported in favor of doing so; but he resigned, only to be immediately re-elected by his constituents. He died suddenly of inflammation of the throat before the close of the second month of his term.

BROOME, a co. in s. New York, on the Pennsylvania border; 680 sq.m.; pop. '75, 42,149; in '80, 50,056. It is drained by the Susquehanna, Chenango, Otselic, and other streams, and intersected by the New York and Erie, Albany and Susquehanna, Syracuse and Binghamton, and Delaware, Lackawanna and Western railroads, and the Chenango canal. Productions agricultural, including an immense quantity of butter. Co. seat, Binghamton.

BROOME, WILLIAM, LL.D., 1689-1745; coadjutor of Pope in translating the *Odyssey*. For writing all the notes and translating eight books of the Greek text, B. received \$2500; but Pope loved money, and when the small price became notorious it annoyed the poet so that he abused B. in the *Dunciad* and in the *Bathos*. B. published a *Miscellany of Poems*, and translated some of Anacreon's odes. He was a rector in Suffolk.

BROOMS. See BRUSHES AND BROOMS.

BROTHER JONATHAN, a synonym for the people of the United States, as "John Bull" is for the people of England. When Washington took command of the revolutionary forces in New England, he found an immediate necessity for arms and other war materials, Jonathan Trumbull was then governor of Connecticut, a man of excellent judgment, and a highly esteemed friend of Washington. It happened that at an important council of officers where the wants of the service were the topic under consideration, Washington remarked, in reference to some knotty question: "We must consult Brother Jonathan," meaning governor Trumbull. The expression was repeated on occasions of difficulty, and before the war closed it was established as a convenient name for the whole people.

BROUGHAM, JOHN, b. Ireland, 1810, d. N. Y., 1880; studied surgery for a considerable time, but was obliged to leave school on account of adversity, and went to London, where he proposed to enter the East India service; but an old man gave him a guinea, and urged him to seek some fitter employment. Happening to meet an old acquaintance, he got an engagement in the prince of Wales theater, and there in July, 1830, he acted six parts in the old play *Tom and Jerry*. In 1830, he was a member of the company organized by Madame Vestris. About this time he wrote his first play, a burlesque, prepared for William E. Burton, then acting in London. In 1840, he was a member of the Lyceum, for which theater he wrote a number of plays. He came to the United States in 1842, and appeared in the old Park theater in New York city. Soon after he joined Burton's company in Chambers street; and here also he wrote a number of plays, among which were *Vanity Fair*, *All is Fair in Love*, *Dombey and Son*, and the *Irish Emigrant*. Afterwards he managed Niblo's Garden, and in Dec., 1850, he opened Brougham's Lyceum on Broadway, where he produced *David Copperfield*, and a new version of the *Actress of Padua*, the latter written for Charlotte Cushman. He then connected himself with Wallack's company, in which he remained until 1860; then managed the Bowery theater, reviving *King John* with superb scenery. Meanwhile he was writing plays, among which were the *Game of Love*, *Bleak House*, *A Decided Case*, *Game of Life*, *Playing with Fire*, *Pocahontas*, *Love and Murder*, *Romance and Reality*, etc. After several seasons at Wallack's, he rejoined Burton and produced his burlesque of *Columbus*, and other plays. In 1860, he went to England, where he remained five years, and there too he was writing and adapting plays, among them the *Duke's Motto*, for Mr. Fechter. He reappeared in New York in Oct., 1865, and not long after again joined Wallack's company, with which he remained until the close of his life. Among his later plays are *John Garth*, and *The Lily of France*.

BROUGHTON, JOHN CAM HOBBHOUSE, Lord, 1786-1869; an English statesman. At his death the peerage became extinct, as he left no male issue. In his school days at Cambridge he was the intimate friend of Byron, and the two made a tour of southern Europe at a later period. He was a radical, and, in 1816, wrote a book to correct certain current misrepresentations of the events of the *Hundred Days in Paris*. The work gave great offense both in England and France. The translator and printer in Paris were sentenced to fine and imprisonment for an "atrocious libel," and in London he was confined in Newgate nearly three months. As a martyr to toryism, he tried for parliament in the borough of Westminster, but was defeated, though chosen by a large majority only two years later. For 12 years he was an ardent and courageous advocate of liberal measures, among them the repeal of the test and corporation acts, and Roman Catholic emancipation. In 1831, he became a baron, and in the same year was secretary of war in the Grey ministry. Subsequently he was chief commissioner of woods and forests, and president of the board of control. In 1851, he became a peer, and ceased to participate in public life. Lord B. published *Imitations and Translations from the Classics; Journey through Albania with Lord Byron*; and *Historical Illustrations of the Fourth Canto of Childe Harold*.

BROUSSON, CLAUDE, 1647-98; a French Protestant, an advocate and legal defender of the Huguenots. His house was the rendezvous of certain leaders of an outbreak, and he was compelled to fly from the city (Toulouse), barely escaping into Switzerland. He ventured into France twice afterwards, at great peril; but in 1697 he was caught, after many escapes, and sentenced to be broken on the wheel on the charge of treasonable conspiracy with the duke of Schomberg to invade France. He was executed accordingly, Nov. 4, 1693. He left a number of works on the subjects of the period.

BROUSSONET, PIERRE MARIE AUGUSTE, 1761-1807; a French naturalist educated in medicine, and a professor at the age of 18. He labored zealously to establish the Linnæan system of botany in France, and visited England, where he was admitted to the royal society, publishing in London *Ichthyologie Decus I*. In Paris he was perpetual secretary of the society of agriculture, and a member of the electoral college of the city. Subsequently he visited Madrid and Lisbon, and went as physician to an embassy which the United States sent to the emperor of Morocco. Still later he was French consul at Teneriffe; in 1797 a member of the institute, and in charge of the botanical garden at Montpellier. He died of apoplexy soon after his election to the national legislative body. France is indebted to him for the introduction of the Merino sheep and the Angora goat.

BROUWER, ADRIAN, 1608-40; a Dutch painter. He was apprenticed to Frank Hals, who treated him with great severity, and drove him to dissipation and the low life so well depicted in his works. The best collection of his pictures is in the Munich gallery.

BROWN, a co. in Illinois, on the Illinois river; 320 sq.m.; pop. '70, 12,205. In part prairie and in part wooded, with fertile and well-cultivated soil. It is intersected by the Toledo, Wabash, and Western railroad. Agriculture is the main business. Co. seat, Mount Sterling.

BROWN, a co. in s. Indiana; 320 sq.m.; pop. '70, 8681; well wooded, and with tolerably productive soil. Agriculture is the chief occupation. Co. seat, Nashville.

BROWN, a co. in n.e. Kansas on the Nebraska border; 576 sq.m.; pop. '73, 10,446; in '80, 12,759. The co. is crossed by the St. Joseph and Denver City railroad. Productions, grain, hay, butter, and cattle. Co. seat, Hiawatha.

BROWN, a co. in s. Minnesota, on the Big and Little Cottonwood; 450 sq.m.; pop. '76, 6396. Chief business, agriculture. Co. seat, New Ulm.

BROWN, a co. in s.w. Ohio, on the Ohio river; 502 sq.m.; pop. '70, 30,802; in '80, 32,965. Hilly near the river, but level inland; fertile and well cultivated. Produces grain, butter, sorghum molasses, and some wine. Co. seat, Georgetown.

BROWN, a co. in w. Texas, on Colorado river; 1050 sq.m.; pop. '70, 544. Hilly and prairie surface, with rich soil. Chief business, stock raising. Co. seat, Brownwood.

BROWN, a co. in e. Wisconsin at the head of Green bay; 525 sq.m.; pop. '70, 25,168. Uneven surface; productions agricultural. The Wisconsin division of the Chicago and Northwestern railroad passes through. Co. seat, Green Bay.

BROWN, BENJAMIN GRATZ, b. Ky, 1826; graduate of Yale; made his home in St. Louis, and in 1852 was a member of the legislature. In 1854, he started the *Missouri Democrat*. In the civil war he fought for the union, commanding a brigade. In 1863, he was a United States senator from Missouri, and in 1872 was the democratic candidate for vice-president.

BROWN, CHAD, d. 1665; he left Massachusetts in 1636 because of differences with the leaders of the colony, and settled in Rhode Island, where he became an elder in a Baptist church, and the progenitor of many prominent citizens.

BROWN, FRANCIS, D.D., 1718-1820; a native of New Hampshire, and graduate of Dartmouth college, of which he became president in 1815. Some of his sermons and pamphlets have been published.

BROWN, GEORGE L., b. 1814 in Boston; an American painter, of whose productions the more notable are "The Crown of New England" (the White mountains), and "The Harbor of New York."

BROWN, GOULD, 1791-1857; a grammarian; b. in Rhode Island; for 20 years a teacher in New York, and author of several elementary and progressive works on English grammar, the most important of which is his *Grammar of English Grammars*.

BROWN, HENRY KIRKE, b. Mass., 1814; an American sculptor, well known for works in bronze. He studied portrait-painting in Boston, and after spending some years in Italy, settled in Brooklyn, N. Y. He made the first bronze cast achieved in the United States. Some of his figures are "Hope," "The Pleiades," "The Four Seasons," and statues of De Witt Clinton, Washington, Nathaniel Greene, Lincoln, and gen. Scott.

BROWN, HUGH STOWELL, b. 1823; an English clergymen who left the established church and joined the Baptists; he soon became a leader, and is still very popular with the working classes.

BROWN, JACOB, 1775-1828; an American general commanding on the Canadian frontier in the war of 1812; he showed skill and courage in the defense of Sackett's Harbor, and in the battles of Chippewa and Niagara Falls. In 1821, he was chief in command of the United States army.

BROWN, JOHN, D.D., b. 1715-66; an English divine and author; educated at Cambridge; served with distinction as a volunteer in 1745, and was about that time appointed chaplain. He is best known by his writings, such as *Honor*, and *Essay on Satire* (poems); the tragedy of *Barbarossa*, produced by Garrick, followed by *Athelstone*, a satire on the manners and principles of the time; a *Dissertation on the Rise, Union, and Power, etc., of Poetry and Music*. He was affected with deep melancholy at times, and in the last of these afflictions committed suicide.

BROWN, JOHN, 1736-1803; merchant of Providence, R. I.; the leader of the men who destroyed the *Gaspee*, an English sloop-of-war, June 17, 1772. He was arrested and put in irons, but escaped. He was a member of congress from Rhode Island, and a patron of Brown university.

BROWN, JOHN, 1744-80; graduate of Yale, and king's attorney in New York. In 1775, he was an emissary in Canada to provoke the people against the English government. He was with Allen at the capture of Ticonderoga, and at Quebec when Wolfe

was killed. He was killed by Indians while on the way to help Schuyler in the Mohawk valley campaign.

BROWN, JOHN, 1757-1837; b. Va.; soldier in the revolutionary army. He was a student at Princeton and at William and Mary college; and after residing in Kentucky for a few years, returned to Virginia, and represented that state in congress, 1787-93. From 1793 to 1805, he was United States senator from Virginia.

BROWN, JOHN, b. Conn., May 9, 1800; d. Dec. 2, 1859; an American abolitionist, celebrated as the originator of the insurrection at Harper's ferry. He was intended for the ministry, but was compelled to give up study on account of inflammation in his eyes. With his family he removed to Ohio, where he worked as a tanner, and engaged in the wool trade, in which he failed. He then went to Essex co., N. Y., and began as a farmer, but in 1854 followed his four sons, who had settled in Kansas, and were subjected to much persecution on account of their opposition to slavery. When the free-state men organized to repel the Missourians who were besieging Lawrence, Brown and his sons were among the foremost on the free-state side; and a little later they made a remarkable defense against vastly superior numbers near Ossawatimie. After many rough adventures in the Kansas troubles, B. formed the project of an insurrection in the south among the slaves as the surest means of securing their liberation. He drilled a small force in Iowa in the winter of 1857, and the next spring, in Canada, drew up a new provisional constitution for the states, under which he was selected as commander-in-chief, one of his sons, and Richard Realf and John Kagi, being civil officers. The next important event was the rescue by B. of certain slaves in Missouri who had been sold and were to be taken to Texas, one of the owners of the property being slain in the conflict. Again he went to Canada, returning to the United States in the summer. His attempt to capture the arsenal at Harper's ferry was made on Sunday night, Oct. 16th, 1859. The arsenal was easily seized, several citizens were taken into custody, conspicuous houses were searched for arms, and few of the citizens knew what was going on until mid-forenoon, when they began to rally; some scattered firing followed, one colored man was killed (by Brown's men), the mayor was slightly hurt, and so was one of Brown's sons. There was no sign of a rising of negroes, and before noon Brown and his men were in the arsenal, virtually prisoners. A feeling of rage prevailed so strongly, that a man who came from the arsenal with a flag of truce was instantly killed, and one prisoner was put to death. At night Brown had three unwounded whites and a few useless negroes for his army; one of his sons lay dead, and another was badly wounded. In the morning a force of United States marines arrived, and Brown, fighting desperately to the last, was taken prisoner, being wounded once with a sword, and twice with the bayonet. All of the invaders were indicted for conspiring to incite insurrection, and for murder and treason. After a trial of three days, in which Brown was unable, on account of his wounds, to stand up; he was found guilty, and sentenced to death on the scaffold within 48 hours. He died calmly on the 2d of Dec., 1859. It may safely be assumed that his execution hastened the downfall of slavery in the United States. B. was a man of stern and uncompromising moral principle; and though open to the charge of fanaticism, and regarded as justly and necessarily condemned to death under the law, he seems to be increasingly viewed as a martyr and a hero, offering himself in a blind and unconscious sacrifice as an obstacle in the path of a gigantic social and political wrong.

BROWN, JOHN NEWTON, D.D., 1803-68; b. Conn.; a Baptist clergyman who published an *Encyclopædia of Religious Knowledge*, and *Memorials of Baptist Martyrs*.

BROWN, NICHOLAS, 1796-1841; b. R. I.; the chief patron of Brown university, which in 1804 changed its name in his honor from Rhode Island college. In early life he was a member of the house of Brown & Ives, successful merchants. The gifts of Brown to the university reached more than \$100,000. He also gave \$30,000 to establish an insane asylum in Providence, besides large sums to the athenæum, and to churches, etc.

BROWN, SAMUEL GILMAN, D.D., LL.D., b. Maine, 1813; graduated at Dartmouth college and Andover theological seminary; traveled in Europe; was professor in Dartmouth of oratory and intellectual philosophy; elected president of Hamilton college in 1867, and resigned the position in 1880. He has published a *Life of Rufus Choate*; *Biography of Self-Taught Men*; etc.

BROWN, SAMUEL R., D.D., 1810-80; b. Conn. His mother was the author of the familiar hymn, *I love to steal a while away*. The family removed in early childhood to Monson, Mass. Dr. B., as an American missionary, founded the first Protestant Christian school in China, at which Yung Wing, now a member of the embassy from China to the United States, and chief of the educational commission which has 120 Chinese youths in New England schools and colleges, was educated. Graduated from Yale in 1832, Dr. Brown sailed for China, 1838, and was manager of the Morrison Chinese school for boys, at Canton, 1838-47. He was in the United States, 1847-59; and in 1859, was stationed at Yokohama, Japan, as one of the first missionaries. He is translator of the Bible into Japanese, and of several Japanese books; author of *Colloquial Japanese*, a grammar; *Prendergast's Mastery System*, adapted to the study of English or Jap-

anese; and of many articles on Chinese and Japanese subjects. He returned to this country in feeble health, in 1879, and died in Monson, Mass.

BROWN, THOMAS, 1663-1704; recognized by Addison as "of facetious memory." He was a farmer's son, and entered at Oxford, but was obliged, for his wild conduct, to leave college. In London, after trying teaching, he wrote poems, letters, etc., for his bread. His works are witty, but coarse, and often indelicate. He would lose his friend sooner than his joke.

BROWN, ULYSSES MAXIMILIAN; 1705-57; after studying at Limerick, Rome, and Prague, he entered the Austrian army, serving with distinction in Corsica and Italy, and rising rapidly in rank. In 1739, he was field-marshal lieut., and one of the aulic council. He was field-marshal in the seven years' war, repulsed the Prussians at Lowositz, and was mortally wounded in the great battle of Prague.

BROWN, WILLIAM LAWRENCE, 1755-1830; minister of the English church at Utrecht, and successor of his father and uncle. He was also professor of moral philosophy and ecclesiastical history in the university, to which was added a professorship of the law of nature. After the French revolution he escaped to England, and at a later period became principal of Marischal college, Aberdeen. In 1800, he was chaplain to the king, and in 1804 dean of the chapel royal. His best known works are *Essay on the Natural Equality of Man; On the Existence of the Supreme Creator*; and on the existing religions with regard to their moral tendency.

BROWNE, EDWARD HAROLD, D.D., an English bishop, b. 1811; educated at Cambridge, and holding various professorships until in 1864 he was consecrated bishop of Ely. He has published *An Exposition of the Thirty-nine Articles; Aids to Faith*, etc.

BROWNE, ISAAC HAWKINS, an English poet, 1705-60; educated at Cambridge; then engaging in the law. He was twice chosen to parliament; but his reputation rests exclusively upon his poems, such as *Design and Beauty*, and *The Pipe of Tobacco*, in which he imitates Cibber, Pope, Young, Swift, and others, all of whom were living when it was published. *De Animæ Immortalitate*, a close imitation of Lucretius, was his most important work.

BROWNE, JOHN ROSS, b. 1817; an emigrant from Ireland to the United States when a child. He learned shorthand writing, and became a reporter in the United States senate. Having a desire to travel, he went first on a whale-ship, and on his return published a book of observations in Zanzibar. He next went on government business to California in 1849. Two years later he went as correspondent of a newspaper to Europe, traveling through Italy, Sicily, and Palestine, and giving an account in *Yusef*. After further service in the north-western territories and on the Pacific coast, he went to Algeria, Iceland, Poland, and Russia, and published *The Land of Thor*, and *An American Family in Germany*. In 1869, he published an elaborate report on the *Resources of the Pacific Slope*. He was minister to China for a short time, appointed in 1868, but recalled two years later.

BROWNE, WILLIAM, an English poet, b. 1590, of whose life little is known, save that he was in Exeter college, Oxford, and was a tutor to an earl of Caernarvon. He was of the school of Spenser, and author of *Britannia's Pastorals*, and *The Shepherd's Pipe*.

BROWNE, WILLIAM GEORGE, 1768-1813; an English traveler, educated at Oxford. He visited Egypt and Sinai in 1793, and tried to go through Abyssinia. In 1800, and later, he traveled in Greece, Asia Minor, and Sicily. In 1812, he proposed to visit Samara and, survey unexplored Central Asia. After leaving Teheran in 1813 he was no more heard from, save that the party were attacked by banditti and plundered and Browne was murdered. Thevenot, the French traveler, found and buried what he supposed were his bones.

BROWNELL, HENRY HOWARD, 1820-72; b. Rhode Island; educated at Trinity college, Hartford, and intended for the bar, but devoted himself to teaching and authorship. In 1847, he issued a volume of poems, after which came *The People's Handbook of Ancient and Modern History; The Discoverers, Pioneers, and Settlers of North and South America*, etc. Near the close of the civil war he was acting ensign on admiral Farragut's staff, and after the war accompanied the admiral to Europe. In 1866 he issued in a volume *War Lyrics and other Poems*.

BROWNELL, THOMAS CHURCH, D.D., LL.D., 1779-1865; b. Mass.; graduated at Union college in 1804, where he was tutor and professor of chemistry and mineralogy. In 1810, he traveled in England and Ireland; and in 1816 was ordained a minister of the Protestant Episcopal church. In 1818 he was assistant minister of Trinity church in New York city, and in 1819 made bishop of Connecticut. It was under his care that Washington (now Trinity) college was founded, he being the first president. He was the author of *The Family Prayer Book*, and author and compiler of *Religion of the Heart and Life*.

BROWNIAN MOVEMENTS. The motion of non-living particles as seen through the microscope, often mistaken for motions of living matter. The cause of the movements has not been satisfactorily shown, but it has been surmised that heat is the motive power.

BROWNISTS, a sect of English puritans of the 16th c., who took their doctrines and name from Robert Brown. In 1592, sir Walter Raleigh estimated their numbers at 20,000. Harsh measures suppressed them in England, or drove them out; but the exiles found refuge in Holland, where their church included a number of eminent men. Ere long they divided into Brownists and Separatists, and soon the Brownists gave place to the Independents, or Congregationalists. The Brownists objected not to the doctrine, but to the form of government of the English church, and to that of the Presbyterians as well. They would join no other reformed church on account of the toleration of unregenerate persons as members, with whom they held it impiety to be in Christian fellowship. They condemned the wedding service in church, holding marriage to be a civil contract; refused the baptism of the children of those not church-members, or of those who did not take sufficient care of their children already baptized, and rejected all forms of prayer, holding even that the Lord's prayer was presented as a model for imitation, not for repetition. Their form of church government was democratic, all power residing in the brotherhood. The churches were severally independent; the minister of one could not officiate in another. Lay brothers could prophesy or exhort, and it was usual after a sermon to question and discuss the topics broached. Every Brownist church was a perfect body corporate, possessing full power over its own members and acts, and accountable to no other jurisdiction whatever. The principles of this sect were those of a rude and extreme independency—the natural reaction from the ecclesiastical abuses of those times. Their leader, late in life, returned to the established church, becoming again a clergyman in it. His followers divided among themselves on some minor points of principle or of method, and the sect as a body came to nought. Yet those who favor "voluntaryism" in the church as against national establishment, and the sovereignty of the local congregation as against the consolidation of all the churches of some vast region, claim that the Brownist movement was the rough prophecy and heralding of a cardinal principle of polity then about to be restored to the church after ages of neglect.

BROWNLOW, WILLIAM GANNAWAY, 1805-77; b. Va. He was bred to the carpenter's trade, but in 1826 became a Methodist minister, and was for 10 years an itinerant. He took part in politics, advocating the election of Adams in 1828. In 1837, he was editor of the *Knoxville Whig*, and his bold and quaint utterances soon gave him a wide reputation. In 1856, he defended the Methodist church in a work called *The Iron Wheel Examined and its Spokes Extracted*. Two years later, with Rev. A. Pryne of New York, he discussed the question, "Ought American Slavery to be Perpetuated?" Brownlow defended slavery. In the secession he clung to the union as the best means of upholding the institutions of the south. For this he was arrested by the confederate government and sent out of their lines. He returned to Tennessee in 1864, and the next year was elected governor, and in 1869 was sent to the United States senate. He was ardent, fearless, and resolute, caring little for refinement in speech or action.

BROWN-SÉQUARD, CHARLES EDWARD, b. in the island of Mauritius, 1818; a French-American physiologist. He was educated and took the degree of M.D., in Paris, in 1840, and thenceforward devoted his attention to experimental physiology, occasionally coming to the United States to lecture and make observations. His name is connected with many interesting experiments with the blood, such as transfusion, fibrinizing and defibrinizing, and with oxygen and other elements. He concludes that arterial blood is subservient to nutrition, and maintains the irritability of the muscles; and that venous blood is necessary to produce muscular contraction. He puts natural animal heat at 103° Fahr., four or five degrees higher than the standard of most physiologists. Concerning the spinal cord, most authorities agree that its posterior columns are sensitive, and convey sensation to the brain; that the interior columns are motor, and convey the influence of the will to the voluntary muscles; and that the gray matter of the cord serves only to reflect impressions from the sensitive to the motor nerve roots. Brown-Séquard concludes that the sensitive fibers do not communicate directly with the brain, but convey impressions to the gray matter of the cord, by which they are transmitted onward to the brain, and that their decussations or crossings take place on the cord itself, at or near the point at which they enter, not at the cerebellum or medulla oblongata. He came to the United States to reside in 1864, and was appointed professor of the physiology and pathology of the nervous system in the medical department of Harvard university, where he remained four years. Returning to France in 1869, he was appointed professor of experimental and comparative pathology in the school of medicine at Paris. In 1858, he started the *Journal of the Physiology of Man and Animals*; in 1869, he published *Archives of Normal and Pathological Physiology*. He again returned to the United States in 1873, began practice in New York city, and, with Dr. Seguin, commenced the publication of the *Archives of Scientific and Practical Medicine*.

BROWNSON, ORESTES AUGUSTUS, LL.D., 1803-77; b. Vermont; a theologian and author. He was at first a Presbyterian, but soon became a Universalist preacher, and was an indefatigable writer in support of whatever he for the time adopted. In 1828, he went into politics and tried to establish a workingmen's party in New York, moved thereto by the ideas of Robert Owen. In 1832, he was enthusiastic over Dr. Channing, and became a Unitarian preacher; in 1836, he organized in Boston "The Society of

Christian Progress," as a church of which he was pastor. About this time he published *New Views of Christianity, Society, and the Church*, which was a moderate attack on Protestantism. In 1838, he started the *Boston Quarterly Review*, which had existence for about five years, and was then merged in the *New York Democratic Review*. In 1840, he published *Charles Elwood, or the Infidel Concerted*, a treatise in the form of a story, in favor of the Roman Catholic church, towards which the author was drifting, and which he joined in 1844. His literary labor was enormous, nearly all the original matter in his various reviews and magazines being from his own pen. Though so changeable in his early years, he seems to have found a final conviction in his late life; and he certainly gave to the Roman Catholic church a sincere and powerful advocacy.

BROWNSVILLE, a t. in Fayette co., Penn., 30 m. s. of Pittsburgh; pop. '70, 1749. The village is on the Monongahela river, over which there is a large and expensive bridge. The river is navigable to this point.

BROWNSVILLE, a village in Haywood co., Tenn., on the Louisville and Memphis railroad, 57 m. n.e. of Memphis; pop. '70, 2454—1016 colored. There is a college for women under Baptist direction. The village is in a rich planting district, and has a good trade.

BROWNSVILLE, a city in Cameron co., Texas, on the Rio Grande opposite Matamoros (Mexico), 35 m. from the gulf; pop. '70, 4905. It is a port of entry, and has a considerable commerce. Fort Brown, near the city, is occupied by a United States garrison.

BROWN UNIVERSITY, at Providence, R. I., was organized in 1764, at Warren, in the same state, and removed in 1770 to its present location. It was known at first as Rhode Island college, but in 1804 the name was changed in honor of Nicholas Brown, one of its most munificent benefactors. It has been from the beginning under Baptist direction and patronage, but it is not sectarian in its teaching. It has an endowment of \$775,000, and an annual income of \$65,000. Its property is valued at over \$1,250,000. The college buildings, five in number, stand upon elevated ground, and are inclosed in a campus of 16 acres, beautifully graded and adorned with trees, chiefly elms. The library, a choice and admirable selection, contains 52,000 volumes and 16,000 pamphlets; and a permanent fund of \$27,000 insures its constant increase. The museum of natural history contains a valuable collection of specimens. There are (1880) 14 professors, 3 other teachers, and 260 students. The alumni number 2845. Mr. James Manning was the first president, Rev. Jonathan Maxey the second, and Rev. Asa Messer the third. The latter was succeeded in 1827 by Rev. Francis Wayland, D.D., one of the most eminent of American divines and educators, under whose direction the institution greatly prospered. His successors have been Barnas Sears, D.D., LL.D., 1865-67; Alexis Caswell, D.D., LL.D., 1867-72; and the present incumbent, E. G. Robinson, D.D., LL.D., appointed in 1872. A fund of \$50,000, created by the state, sustains 30 scholarships. More than 50 other scholarships, each yielding about \$60 per annum, have been established; and there is an arrangement whereby \$25 is annually deducted from the tuition of a number of indigent students, not exceeding two fifths of the whole body.

BRUCE, a co. in n.w. Ontario, Canada, on lake Huron; 1600 sq.m.; pop. '71, 68,815. There is a coast line of 130 m. in the n.w. part of the county, forming a long peninsula between the lake and Georgian bay. Vast beds of salt underlie the coast along the lake. In the s. part the soil is level and fertile. Capital, Walkerton, on Saugenee river.

BRUCE, GEORGE, 1781-1866; b. Scotland, came to Philadelphia in 1795 as a printer, and in 1803 became publisher of the *New York Advertiser*. In 1812, he and his brother introduced the art of stereotyping, and followed that and type-founding thereafter. One of the nephews was the inventor of a machine for casting types.

BRUCITE, a native magnesian hydrate, found in serpentine in New Jersey, and in the chrome mines in Texas. Syn. MgH_2O_2 .

BRUCKER, JOHANN JAKOB, a German theologian and historian, 1696-1770. He was educated at Jena, where he took the degree of A.M. in 1718, and the next year published *Textamen Introductionis in Historiam de Ideis*. In 1723 came *De Vita et Scriptis C. Tringeri*, and in 1731 he was chosen a member of the Berlin academy of sciences. Thence he went to Augsburg as pastor of the church of St. Ulric, where he published dissertations on the history of philosophy, and still later a history of philosophy in dialogue form. In 1741 came the first volume of his great work on the critical history of philosophy, completed in 1744, a work that had an immense success. He wrote many other works on philosophical subjects, and superintended and corrected an edition of Luther's translation of the New Testament, but did not live to complete it.

BRUGMANS, SEBALDUS JUSTINUS, 1763-1819; a Dutch naturalist and physician, professor of philosophy and physical sciences at Franeker, Holland, where he founded a museum of comparative anatomy. He organized and became chief director of the sanitary institution of Holland. He improved the condition of military hospitals, and by his effort the 20,000 soldiers wounded at Waterloo were properly cared for. In 1815,

he was at the head of the sanitary service of the army and navy. Many of his papers on medical science and natural history have been published.

BRUGSCH, HEINRICH KARL, PH. D., b. 1827; a German Egyptologist, and director of the Egyptian museum in Berlin. He made two visits to Egypt for archaeological purposes, and was a member of the Prussian embassy to Persia in 1880. In 1864, he founded at Leipzig a periodical devoted to Egyptian archaeology. At Göttingen he was professor in 1868-70, when he became director of an Egyptological school at Cairo. He has published several important works on Egyptian subjects, one especially interesting, on the Biblical story of the crossing of the Red sea, advancing a theory quite different from that long accepted as to the place of that event. He assigns the crossing by the Israelites and the engulfing of the Egyptians to the vast morass near the shore of the Mediterranean, and occasionally inundated by its waves driven by a strong wind. His evidences of this show ingenuity and learning, but have not commanded the general assent of scholars.

BRUMATH, or **BRUMPT**, a t. of Lower Alsace, on the Zorn; pop. '71, 5619. It has a castle and mineral wells, and is on the site of the ancient Brucomagus.

BRUMIDI, CONSTANTINE, 1805-80; a native of Rome, Italy, son of a Greek father and an Italian mother, widely known as a fresco painter. He was educated in the college of fine arts at Rome, and came to the United States in 1852. His first work, "The Crucifixion," was in St. Stephen's church in New York. Thence he went to Philadelphia and to the city of Mexico, at both places employing himself in church decoration. In 1854 he arrived in Washington, and was at once employed on the bare walls and ceilings of the national capital, the rotunda of which contains many fine pieces from his hand, combining mythology, allegory, and history. There are cartoons of his yet to be put in place, but by other hands, including "Oglethorpe and the Indians," "The Battle of Lexington," "Surrender of Cornwallis," "Decatur at Tripoli," "The Death of Tecumseh," "Entrance of General Scott into Mexico," and "The Discovery of Gold."

BRUMMEL, GEORGE BRYAN, 1778-1840 (better known as "Beau" Brummel); a man of wealth and fashion, who became an intimate companion of the prince of Wales, and was looked upon by the society of his day as the "glass of fashion and the mold of form." He was the arbiter in all matters of fashion, and considered the very top of perfection in taste, especially in dress. As long as his fortune lasted or the prince of Wales would contribute, he kept up an elegant bachelor establishment in London; but finally he lost the favor of his royal friend, became poor, gambled recklessly, fled from his creditors, and died in France in a hospital for mendicants.

BRUNDUSIUM. See **BRINDISI**, *ante*.

BRUNEHAUT, or **BRUNEHILDE**, 534-613; daughter of Athanagild, king of the Visigoths and wife of Sigebert, king of Austrasia. Her sister Galsunda, the wife of Chilperic, king of Neustria and the brother of Sigebert, had been abandoned and murdered by Chilperic at the demand of his mistress, Fredegonda, who became queen. Brunehaut induced her husband (Sigebert) to invade Neustria, where, while besieging Tournay, he was slain by emissaries of Fredegonda, and Brunehaut was taken prisoner by Chilperic. At Rouen she persuaded one of Chilperic's sons to marry her, and, with the help of the bishop of the place, she escaped to Austrasia, which was then ruled by Childebert; but she recovered her authority. After the death of Childebert she provoked war between her grandsons, heirs to the throne, in which one was killed, and she was about to take the throne when a son of Fredegonda, Clothaire II., interposed and captured her easily, as her army refused to fight. She was for three days exposed to torture and insult, and then tied to the tail of a wild horse and dragged to death, after which the body was burned and the ashes scattered to the air.

BRUNNER, SEBASTIAN, b. 1814; chaplain of the university of Vienna, where he studied theology. In 1848, he established the *Vienna Church Gazette*. Soon after he published, under the name *Nibelungen-Lied*, a satire upon Hegel's doctrines. His entire works have been collected in 20 vols. Among them is a sharp criticism of Renan's *Life of Christ*. In all his writings he is of the ultramontane Roman Catholic school.

BRUNNER, or **BRUNN, JOHANN CONRAD**, 1653-1727; a German anatomist, professor in the university of Heidelberg, and physician to the elector palatine. He made many anatomical investigations, particularly in the pancreas, the small intestines, and the duodenum. His name lives in the *Brunner's Glands*.

BRUNSWICK, a co. in s.e. North Carolina, on the ocean and cape Fear and Waccamaw rivers; 1100 sq.m.; pop. '70, 7754-3306 colored. It is level and swampy, with poor soil, but producing rice and cotton. Tar, rosin, and fine lumber are exported. The railroads are the Washington, Columbia and Augusta, and the Wilmington and Weldon. Co. seat, Smithville.

BRUNSWICK, a co. in s.e. Virginia, on North Carolina, watered by the Roanoke and Nottaway rivers; 600 sq.m.; pop. '70, 13,427-8902 colored. Productions, tobacco, corn, wheat, etc. Co. seat, Lawrenceville.

BRUNSWICK, a t. in Glynn co., Ga.; a port of entry on St. Simon's sound, 8 m. from the ocean, and 80 m. s.s.w. of Savannah, at the s.e. terminus of the Macon and Brunswick and Albany railroads. There is a lighthouse at the entrance of the sound, and the harbor is spacious and safe. Pine lumber is the chief article of export. Pop. 2348.

BRUNSWICK, a t. and village in Cumberland co., Me., on the Androscoggin, 8 m. w. of Bath. It is at the head of navigation and the foot of water-power on the river, and has mills and other manufacturing establishments. Here are Bowdoin college and the Maine medical school. The Maine Central and other railroads unite at B. Ship-building and lumbering are leading industries. Pop. about 2500.

BRUNSWICK, HOUSE OF. Henry the Lion, who held the united duchies of Bavaria and Saxony in the 12th c., may properly be called the immediate ancestor of this house, though they can trace their lineage back to Albert Azo I., margrave of Este in Italy, who died in 964. The eldest son of Henry the Lion became count palatine by marriage; his second son, Otho, died in 1218 after having been crowned German emperor, and it was therefore William, a younger son, who succeeded to the Brunswick inheritance. Otho, a grandson of Henry the Lion, was invested in 1235 with these domains as a fief of the empire and recognized as the first duke of Brunswick. Ernest the Pious, or the Confessor, who died in 1546, inherited the principalities of Brunswick-Luneburg, and was the founder of both branches of the existing dynasty; he took an active part in the reformation and signed the confession of Augsburg. His descendant, Ernest Augustus, duke of Brunswick-Luneburg, was raised to the dignity of ninth elector of the empire in 1692, by his marriage with Sophia, a grand-daughter of James I. of England. His son George Lewis succeeded to the crown of Great Britain in 1714. Ferdinand, a later duke of this house, entered the Prussian service in 1740, distinguished himself in the seven years' war, decided the battle of Prague, and gained the victories of Corfeld and Mindon. The ducal residence, which had been at Wolfenbittel, was in 1754 removed to Brunswick by duke Charles; he founded the famous Collegium Carolinum, and was a faithful ally of England during the seven years' war. He died 1780. His successor, Charles William Ferdinand, was a nephew of Frederick the great, and married Augusta, daughter of George III. of England. He fought in the seven years' war, and played an important part at the battle of Krefeld in 1758. In 1792 he was commander-in-chief of the allied armies of Austria and Prussia against France. He marched into Champagne, but was compelled to conclude an armistice with Dumouriez after trying in vain to force the position of Valmy. In 1806 he was called to lead the Prussian troops against Napoleon, who defeated him at Jena and Auerstadt; he retired broken-hearted, and died soon afterwards from the effects of his wounds. Napoleon incorporated his duchy with the new kingdom of Westphalia, but after the battle of Leipsic it was restored to his son Frederick William, who had distinguished himself in the campaigns of 1792, 1793, 1806, and who fell at the head of his troops at the battle of Quatre-Bras in 1815. His son Charles Frederick was a minor, and up to 1823 George IV. of England acted as prince-regent. The people of B. endured the misrule of Charles Frederick for seven years; then they revolted and drove him out of his duchy in 1820. He died childless at Geneva in 1873. By an act of the Germanic diet the duchy was transferred to his brother William, prince of Oels (b. 1806), who assumed the government, April 25, 1831. He is still unmarried, and, if he dies without issue, Brunswick will pass to the house of Hanover.

BRUSA, or BURSA. See BROUSSA, *ante*.

BRUSASORCI, or DOMENICO RICCIO, 1494-1567; an Italian painter noted for his close imitation of Titian. He worked chiefly in fresco, and on mythological themes. The "Coronation of Charles V.," the "Procession," "Phaethon," and the "Martyrdom of St. Barbara," are among his more important achievements.

BRUSH, GEORGE JARVIS, b. New York, 1831; educated at Yale, and at Munich, and the Freiberg mining academy; chief of the Sheffield scientific school (of Yale), and professor of mineralogy and metallurgy in Yale college. He has written upon various scientific subjects in the *American Journal of Science*, and assisted in editing Dana's *Mineralogy*.

BRUSHES AND BROOMS, implements of vegetable fiber or hair of very early use, mentioned by Homer. Brushes are simple or compound. The simple kind consists of but one tuft, and are such as hair pencils and painters' brushes. The compound have more than a single tuft. Where they are placed side by side on flat boards they are called stock brushes. Those with single tufts, such as are used by artists, are made of the hair of the camel, goat, badger, and of hog's bristles. The hairs for pencils are arranged so as to form a point in the center, and are fixed in a quill or other small tube. Compound brushes are of set or pan work, and of drawn work. The ordinary house broom is an example of pan work, into the stock of which holes are bored of the size desired. The bristles, hairs, or fibers needed to fill each hole are collected, the thick ends dipped into molten cement, usually pitch, bound with thread, dipped again, and with a quick twist set into the hole. In drawn brushes, those intended for shoes, teeth, nails, etc., and clothes, the holes are more carefully bored, and have smaller ones at the top com-

municating with the back of the brush, through which a loop of wire passes from the back of the stock. Half the number of hairs or fibers needed to fill the holes are passed around the wire, which is then smartly drawn up so as to double the hairs and force them as far as possible into the hole. The outside ends are made even with trimming, and the backs of the brushes are covered with veneer to conceal the wire-work. Bristles are imported from Poland, Russia, and other countries. In 1808, the manufacture of brushes from the fibers of whalebone, and in 1810, from twigs of broom, rushes, and other plants, was patented. In 1842, split quills were added, and in 1872, horn and other substances. The great staple in the United States is broom-corn, a considerable amount being raised in the state of New York, and manufactured by the Shakers. Revolving brushes were patented in 1811; and in 1862, revolving hair brushes, for the use of barbers, were introduced, but they have never become popular. As long ago as 1699, there was invented "a new engine for sweeping the streets of London or of any city or town." But nothing of the kind was put in use until 1825, when revolving brooms were used. A great many improvements followed, and at the present time street-sweeping by such machines is common in large cities. The most important recent invention in brush-making is of American origin, the Woodbury machine for bunching, wiring, and inserting bristles in the stock. In this machine a metal comb of uniform thickness is filled with bristles, holding them by the middle, so that one half of the bristles appear above the surface of the comb, and the other half underneath. The comb thus charged moves in guide-ways, and discharges bristles from each division successively into a channel in which they are brought into a horizontal position and a proper quantity taken up to form a tuft. This tuft is moved along an incline against the end of a cylinder, when a plunger doubles the bristles into a loop, which is seized by wire, and in an instant securely fastened.

BRUSH TURKEY, the native name of an Australian bird of the megapodiidae family, of which a dozen species are known; called also the New Holland vulture, jungle fowl, and native pheasant. It is the only wild fowl known that is gregarious in the duty of hatching. Before the time for laying eggs, several pairs of these birds unite in building an enormous pyramidal heap of vegetable matter in part decayed. In this muck-heap of leaves, grass, and rotting wood the females deposit their eggs, which are placed about a foot from each other and covered 2 ft. deep. The hatching is done by the heat of the decaying matter, and the young appear full feathered and able to take care of themselves from the first. Nests have been found that contained a bushel of eggs. Some species of the brush turkey place their eggs in sand, some construct huge mounds of earth, and some make excavations on the sea-shore. In size and general appearance it much resembles the common domestic turkey.

BRUTTIUM, an ancient division of Italy, comprising the s. portion, now Calabria. The people known as Bruttians became rulers in the peninsula about 356 B.C. Before that period the people seem to have been of some Pelasgian races, but at an early date Greek adventurers started settlements on the coast, of which the more important were Crotona, Rhegium, and Locri. The warlike Greeks subjected the natives and held them in slavery until after the Peloponnesian war. At that period the Lucunians came in from the n. and still further oppressed the natives. At last, about the middle of the 4th c. B.C., the people rising against oppression became their own masters; they gained power rapidly, captured some of the Greek cities, and, assisted by the Lucanians, held their own against the Grecian arms. The B. were powerful until after their participation in the Samnite war against Rome, 282 B.C. Not long afterwards they were subjected to Rome and gave up much of their territory. In the second Punic war they revolted and assisted Hannibal, for which they were punished by Rome in the sacrifice of what little they had left of independence. At that time the Brutti as a nation disappeared from history.

BRUYAS, JACQUES, 1637-1712; one of the Jesuit missionaries in Canada, employed among the Iroquois. He mastered their speech, and wrote some pious works in it. In 1862, his *Radical Words of the Mohawk Language* was first published.

BRUYS, or BRUIS, PETER DE, a priest of southern France supposed to have been one of Abelard's pupils, founder of a sect by the name of Petrobrussians. He opposed the church as it was, seeking to restore the Christian religion to its original simplicity and freedom from symbols, denied the authority of any established hierarchy and the necessity of any priestly ministration, opposed infant baptism and the communion, and held that, as prayer could be offered anywhere, churches were useless. His followers destroyed images, burnt crosses, and maltreated priests. After many years of non-molestation B. was burnt at the stake at St. Gilles. The sect existed for a long time under the name of Henricians, from Henry of Lausanne, one of their leaders.

BRYAN, a co. of e. Georgia, on the sea-coast; 472 sq. m.; pop. '70, 5252-3605 colored. The soil is level and mostly of sand, and in a large degree covered with pine forests. The Atlantic and Gulf railroad passes through the county. Productions, rice, corn, cotton, etc. Co. seat, Eden.

BRYAN, MICHAEL, 1757-1821; an English art critic and connoisseur, author of a *Dictionary of Painters and Engravers*, a recognized standard work. In 1794, he was

employed by several English noblemen to purchase the celebrated Orleans gallery of paintings, an achievement which widely enhanced his reputation.

BRYAXIS, a Greek sculptor, contemporary of Praxiteles and Scopas, with whom he participated in the work on the mausoleum at Halicarnassus about 345 B.C. He also created five colossal figures of the gods at Rhodes, of Bacchus at Cnidus, of Æsculapius and Hygeia at Megara, Apollo in the grove of Daphne at Antioch, a statue of Pasiphæ, and a portrait of Seleucus. It is thought that B. was the first to produce statues of Æsculapius and Serapis.

BRYDGES, Sir SAMUEL EGERTON, 1762-1837; an English author, bred to the law. He was a prolific writer, and is said to have produced 2000 sonnets in a single year. His more important works are *Censura Literaria* in 10 vols. and his own *Autobiography, Times, and Opinions*.

BUANSUAH, a wild dog of India, conjectured to be the progenitor of the domestic animal. It is very shy, lives in thick woods, and, like the wolf, hunts in packs. In companies of a dozen these animals do not fear to attack the tiger. If captured young they are easily tamed.

BUCHAN, DAVID, 1780-1837; an officer in the British navy who spent many years in explorations in the north polar seas. In 1810, he commanded a schooner on the Newfoundland station, and made a trip up the river of Exploits, the largest stream in Newfoundland. In 1818, he commanded an arctic expedition for the discovery of the north pole. He reached 80° 34', but was caught in the ice and drifted about between Greenland and Spitzbergen until his vessel was disabled, when he managed to return to England. In 1823, he was commander on the Newfoundland station, and in 1825 high-sheriff of the colony. A few years later he sailed again for the arctic seas, and was never afterwards heard from. He made many important scientific observations concerning the variation of the needle and ocean currents.

BUCHANAN, a co. in n.e. Iowa, watered by tributaries of the Red Cedar river; 576 sq.m.; pop. '70, 17,034; in '80, 18,090. It is tolerably level and well timbered. The Dubuque and Sioux City railroad traverses the co. near the central portion. Productions chiefly agricultural. Co. seat, Independence.

BUCHANAN, a co. in n.w. Missouri, on the Missouri river; 450 sq.m.; pop. '70, 35,109—1953 colored. Five railroads, or their branches, traverse the county. The soil is fertile; productions chiefly agricultural. Co. seat, St. Josephs.

BUCHANAN, a co. in s.w. Virginia, on the Kentucky border, bounded n.w. by the Cumberland mountains; 500 sq.m.; pop. '70, 3777; in '80, 4330. The surface is rough and much of it mountainous. Agriculture is the chief occupation. Co. seat, Buchanan.

BUCHANAN, CLAUDIUS, D.D., 1766-1815; an English missionary; in 1796, chaplain to the East India company. He wrote *Christian Researches in Asia*, and other works which had much influence in stimulating and supporting missions.

BUCHANAN, FRANKLIN, b. Md., about 1800; a midshipman in 1815, and in 1845 the first superintendent of the U. S. naval academy. In 1855, he was made a capt., and in 1861 had command of the Washington navy-yard. He resigned when the rebellion broke out, but as his state did not leave the union, he asked to be restored. This was refused, and he went over to the confederates, having command of the *Merrimac* in the attack upon the union fleet in Hampton Roads, in which engagement he was wounded. Two years later, as admiral he commanded the confederate fleet so thoroughly defeated by Farragut in Mobile bay. On that occasion he was wounded and taken prisoner, but released when the war closed.

BUCHANAN, JAMES (*ante*), the 15th elected president of the United States, filling the 18th presidential term (1857-61); b. at Stony Batter, Franklin co., Penn., April 22, 1791; d. Lancaster, Penn., June 1, 1868. He was the son of an Irish emigrant and an American mother, educated at Dickinson college, bred to the law, and admitted to practice in 1812. Though a professed federalist, he served as a private in the war with England. In 1814, he was a member of the Pennsylvania legislature, and in 1820 was elected to congress, where he served through five terms. In 1828, he favored Jackson for president, and in the congress of 1829-31 was chairman of the committee on the judiciary. After leaving congress, Jackson sent him as minister to Russia, where he concluded the first commercial treaty between the two countries, securing valuable privileges in the Black and Baltic seas. In 1833, he was chosen to the United States senate, where he supported Jackson, especially in the claim that appointments might be made by the president alone when the senate was not in session. When it was proposed to exclude from congress petitions for the abolition of slavery, B. desired to prevent even the discussion of slavery by congress, proposing to leave the matter solely to the slaveholding states, and holding that congress had no power over it. He favored the recognition of Texan independence, and the annexation of that republic to the United States. In the affair of the French indemnity, he supported Jackson's demand for payment or war. During Van Buren's administration Buchanan supported the independent treasury scheme; favored the pre-emption of public lands, and opposed the bill to prevent the interference of federal officers in elections. He sustained the veto power under Tyler, and opposed the ratification of

the Ashburton treaty, which settled the dispute concerning the northern boundary. When the question of the annexation of Texas came to the senate there were but 15 votes in its favor, but the measure was carried in the form of joint resolutions only three days before the close of the term of congress. B. was the only member of the senate committee of foreign affairs to report in favor of annexation. Polk made him secretary of state. In this position he had to deal with the north-western boundary question, whence arose the famous partisan cry "54° 40' or fight." Both England and the United States had formally claimed the territory between the Pacific coast and the Rocky mountains up to the Russian boundary, but after much negotiation the line of 49° n. lat. was agreed upon. During the war with Mexico, B. was busy in avoiding or preventing the interference of other nations. He was in private life during the discussion and adoption of the compromise measures of 1850, but fully approved them. When Pierce came into office in 1853, he sent B. as minister to Great Britain, where he was engaged in endeavors to settle a series of questions concerning Central American affairs. In the course of these duties he was present at the Ostend conference, the object of which was to bring about the sale of Cuba to the United States; but nothing resulted beyond talk. In April, 1856, B. returned to the United States, and in June was nominated for president by the democratic party. The electoral vote was: for Buchanan, 174; for John C. Fremont (candidate of the newly organized republican party), 114; for Millard Fillmore (native-American), 8. The popular vote was: Buchanan, 1,838,169; Fremont, 1,341,264; Fillmore, 874,534; majority against Buchanan, 377,629; plurality for him, 496,905. He had the votes of every slaveholding state except Maryland, which went alone for Fillmore. The vote for Fillmore also gave Buchanan California and New Jersey. In the executive chair his effort was to smother and put out of sight the agitation concerning slavery not only in new states, but everywhere. Among other acts of his administration was the temporary pacification of the Mormon troubles, and the vetoing of the homestead bill. After Lincoln's election, B. was more than ever anxious to suppress the slavery discussion, and pointedly accused the north, in his last message, as to blame for the impending disorder, because of that discussion, which had "produced its malign influence on the slaves, and inspired them with a vague idea of freedom." While holding that the executive ought to take care that the laws be faithfully executed, he shrunk before the secession of South Carolina, declaring that he could not employ force except upon the demand of the lawful authorities of the state, and in South Carolina no such authority then existed. His argument was that, if a state had withdrawn, or was even attempting to withdraw, from the union, there was no power in the constitution to prevent the act. A few days later he was confronted by commissioners from South Carolina (that state having passed an act of secession on the 20th Dec., 1860), who came to demand the surrender by the president to the seceded state of all public property, and to negotiate for the continuance of "peace and amity between that commonwealth and the government at Washington." His reply was that he had no power, and could only refer the matter to congress; he could only receive them as "private gentlemen of the highest character," and treat respectfully such propositions as they might make. He did, however, decline to accede to their demand for the removal of the troops from Charleston harbor. The cabinet immediately broke up. Gen. Cass was secretary of state, but resigned when the president refused to order reinforcements to the Charleston ports; the secretary of the treasury and the secretary of the interior had already gone; Floyd, secretary of war, resigned because the president refused to withdraw the troops. The last official act of president Buchanan of any importance was characteristic of his whole course where the south and its institutions were concerned. It was embodied in a letter from the secretary of war (Holt) to the governor of South Carolina (Jan. 5, 1861), which declared, "by order of the president," that "the forts in that state, in common with the other forts, arsenals, and property of the United States, are in charge of the president, and that if assailed, no matter from what quarter or under what pretext, it is his duty to protect them by all the means which the law has placed at his disposal;" adding that it was not his present purpose to garrison the forts, as he "considered them entirely safe under the protection of the law-abiding sentiment for which the people of South Carolina had ever been distinguished; but should they be attacked or menaced with danger of being seized or taken from the possession of the United States, he could not escape from his constitutional obligations to defend and preserve them." After the installment of his successor, B. retired altogether from public affairs, but a year or two after the rebellion had been put down, he published a defense of his administration and the measures he adopted for the preservation of peace. He was never married.

BUCHANAN, ROBERT, b. 1841; a poet of Scotland, educated at Glasgow university. In 1860, he published *Undertones*, a volume of verses; in 1865, *Idyls and London Poems*. In the same year he edited *Wayside Posies*, and translated ballads from the Danish. Among later works are *Napoleon Fallen—a Lyrical Drama*; *The Land of Lorne, including the Cruise of the Fern to the Outer Hebrides*; *The Drama of Kings*; *On the Fleshly School of Poetry* (a severe criticism of some living English poets); *Master Spirits*; *A Mad Prince* (acted at the Haymarket); and his poems collected in 3 vols. in 1874.

BUCHNER, FRIEDRICH KARL CHRISTIAN LUDWIG, b. 1824; a German atheistic philosopher. He was a practicing physician, in the school of Tubingen, whence he was

removed because of his publication of the doctrine that nothing beyond material force is known to man (published in English as *Force and Matter*). The main ideas of his doctrines are the eternity of matter, the indestructibility of force, the co-existence of light and life, and the infinity of forms of being in time and space. His works have been widely circulated in his own and other languages.

BUCHU. See BUCKU, *ante*.

BUCKAU, a t. in Saxony on the Elbe, adjoining Magdeburg; pop. '71, 9696. It has extensive machine works, and several important manufactories.

BUCKINGHAM, a co. in central Virginia on the James and Appomattox rivers, traversed by the James canal; pop. '70, 13,371—7711 colored. The surface is hilly, but the soil near the rivers is good. There is a gold mine near Willis mountain, and iron and slate are found. Co. seat, Marysville.

BUCKINGHAM, JOSEPH TINKER, 1779-1861; an American journalist, native of Connecticut. He was bred a printer, and in 1800 went to Boston, where, six years later, he began *The Polyanthus*, a monthly magazine, which was soon suspended, but resumed in 1812. In 1809, he published a weekly called *The Ordeal*; from 1817 to 1828, *The New England Galaxy and Masonic Magazine*; and, in 1831, *The New England Magazine*. In 1824, he started the *Boston Courier*, of which he was editor until 1848. On the 24th of June, 1840, he presided over the celebration (in Boston) of the four hundredth anniversary of the invention of printing. As an editor he was a vigorous writer, but rather bitter and personal. He was several times elected to the legislature. Besides his ordinary work, he published *Specimens of Newspaper Literature, with Personal Memoirs, Anecdotes, and Reminiscences*, and *Personal Memoirs and Recollections of Editorial Life*.

BUCKINGHAM, WILLIAM ALFRED, LL.D., 1804-75; the "war governor" of Connecticut (1858-66), noted for his zeal and untiring energy in support of the union cause during the rebellion. Before his election as governor he was a carpet manufacturer and merchant. In 1869, he was elected U. S. senator. Among his benefactions was \$25,000 to the theological school of Yale college.

BUCKINGHAM, or BUCKINGHAMSHIRE, JOHN SHEFFIELD, Duke of; 1649-1721; son of the second earl of Mulgrave. In the war with Holland, he served in the navy and commanded a ship; and afterwards, in the land forces, he joined Turenne to study the art of war. James II. made him lord chamberlain and one of the privy council. He acquiesced in the revolution and was in the cabinet of William III.; and, on the accession of Anne, with whom he was a personal favorite, he received the privy seal and became lord lieutenant of the North Riding of Yorkshire. He sided with the tories, and held last the dignity of lord president. He wrote two tragedies, and an essay on poetry, and one on satire.

BUCKLAND, CYRUS, b. Conn., 1799; a successful inventor, pattern-maker of the U. S. armory at Springfield, Mass., and designer of machinery for making arms. He has produced many new machines and tools in the line of arms manufacturing.

BUCKMINSTER, JOSEPH, D.D., 1751-1812; an American Congregational clergyman, b. Mass. He graduated at Yale, studied theology, and was for a time tutor in the college. In 1779, he became pastor of the North church, Portsmouth, N. H., where he remained for a third of a century, retiring only by reason of failing health. He died soon afterwards, while on a visit to Vermont. Dr. B. took deep interest in the controversy that in his later years divided the Congregationalists into liberals and conservatives. He published many sermons, a memoir of Dr. Mackintosh, and was one of the compilers of the *Piscataqua River Prayer Book*. His daughter published his memoirs and those of his son.

BUCKMINSTER, JOSEPH STEVENS, son of Rev. Joseph, 1784-1812. He was educated at Harvard, and was a teacher in Phillips Exeter academy, having Daniel Webster for one of his pupils. In 1804, he was made pastor of Brattle street church, Boston, one of the leading congregations in New England. In 1806-7, he traveled in Europe, taking a deep interest in the purchase of books for the Boston Athenæum. In 1808, he supervised the republication of *Griesbach's New Testament* (in Greek), and was soon afterwards appointed lecturer on biblical criticism at Cambridge. He was a member of most of the important literary societies of the day. His works have been published in two volumes. While preparing for his biblical lectures in 1811, he had an attack of epilepsy which broke his intellect, and from its effects he died in the following year.

BUCKNER, SIMON BOLIVAR, b. Ky., 1823; a graduate of West Point who went into the service of the confederacy, issuing an address to the people of Kentucky to take arms against the usurper Abraham Lincoln. He surrendered Fort Donelson and 16,000 troops to gen. Grant; was for a time a prisoner of war, and was finally in Kirby Smith's surrender to gen. Canby.

BUCKS, a co. in e. Pennsylvania, on the New Jersey border, bounded by Delaware river; 600 sq.m.; pop. '70, 64,336; '80, 68,522. It possesses mines and quarries of iron, plumbago, zircon, limestone, and sandstone. Surface hilly but well cultivated. The

North Pennsylvania, Philadelphia and Trenton, and Doylestown railroads pass through. Productions, corn, oats, hay, potatoes, butter, tobacco, etc. Co. seat, Doylestown.

BUCKS. See BUCKINGHAMSHIRE, *ante*.

BUCKSPORT, a t. in Hancock co., Me., on the Penobscot, 16 m. s. of Bangor; pop. '70, 3433; '80, 3956. It is a handsome town, regularly laid out on a gentle slope. At the bend of the river there is a strong fort commanding the narrows and the river both up and down. As the river seldom freezes here, B. is a convenient winter port for vessels bound to Bangor. There are several ship-yards and manufactories. In the last war with England, B. was captured by the British.

BUCKWHEAT TREE, *Cliftonia ligustrina*, an evergreen shrub in the gulf states of the order cyrtaceæ, bearing fragrant white blossoms. It grows around ponds and streams, and gets its name from the shape of its pendulous fruit. Its local name is "titi."

BUCYRUS, the co. seat of Crawford co., Ohio, on the Sandusky river, 62 m. n. of Columbus; on the Pittsburgh, Fort Wayne, and Chicago railroad; pop. '70, 3066; in '80, 3848. There are mineral springs and a spring of inflammable oil in the neighborhood. It is in a thickly populated district, and is noted for manufactories and schools.

BUDDÆUS, JOHANN FRANZ, 1667-1729; a learned Lutheran divine, b. in Pomerania. At Wittenberg he won distinction in languages, theology, and history; was Greek and Latin professor at Coburg, professor of ethical sciences and politics in the university of Halle, and in 1705 professor of divinity at Jena. He produced an historical German dictionary, an ecclesiastical history of the Old Testament, a work on practical philosophy, one on laws, and a universal theological history.

BUDGELL, EUSTACE, an English writer for the *Tatler*, *Spectator*, and *Guardian*. He was under-secretary to Addison, and afterwards a member of the Irish parliament. Still later he was comptroller-general of the revenue in Ireland, from which office he was removed because of a lampoon written by him upon the lord lieutenant. In 1720, he lost £20,000 in the South Sea scheme, and afterwards spent £5000 to get into parliament, but did not succeed. Then he started the *Bee*, a weekly journal of short but stinging life. Lawsuits accumulated, and he ended his troubles by drowning, leaving on his table a slip of paper on which was written "What Cato did, and Addison approved, cannot be wrong."

BUDINGTON, WILLIAM IVES, D.D., b. Conn., 1815; graduate at Yale, and in theology at Andover. He was ordained in 1840, and took charge of the first Congregational church in Charlestown, Mass., remaining there 14 years. He published a history of that church in 1845. In 1855, he took charge of the Clinton avenue church, Brooklyn, New York. Failing health compelled him to relinquish public duties early in 1879, and he died in December. Dr. B. was one of the acknowledged leaders in his denomination.

BUEL, JESSE, 1778-1839; a native of Connecticut, began life as a printer, and established the *Albany Argus* in 1813, continuing as the publisher until 1821, when he retired to a farm and became one of the most successful cultivators in the country. In 1834, he started the *Albany Cultivator*, and subsequently published the *Farmer's Instructor* and the *Farmer's Companion*.

BUELL, DON CARLOS, b. Ohio, 1818; a graduate of West Point; served in the Florida and Mexican wars, from 1849 to 1861 assistant adjutant-general in various military departments; in the latter year commanding the department of the Ohio, and in 1862 made maj.gen. of volunteers. He was mustered out in 1864, and resigned his command.

BUENA VISTA, a co. in n.w. Iowa, traversed by the Dubuque and Sioux City railroad, and watered by Coon and other rivers; 576 sq.m.; pop. '70, 1585. Agriculture is the main business. Co. seat, Prairieville.

BUENA VISTA, a small settlement in Coahuila, Mexico, on the San Juan, a tributary of the Rio Grande, 7 m. s. of Saltillo; the site of a battle between the United States forces under gen. Taylor and the Mexicans under Santa Anna, Feb. 23, 1847, the former with 5200 men and the latter with about 20,000. After two days of sharp fighting, Santa Anna was defeated with a loss of nearly 2000; Taylor's loss being 746. The result was due in great part to the superior effectiveness of Taylor's artillery.

BUFFALO, a co. in central Dakota, on the Missouri river; 750 sq.m.; pop. '70, 246. Iron ore has been discovered.

BUFFALO, a co. in central Nebraska, on the Platte river; 850 sq.m.; pop. '76, 4396. Soil fertile. The Union Pacific railroad passes through. Co. seat, Gibbon.

BUFFALO, a co. in w. Wisconsin, on the Mississippi and Chippewa rivers. Grain and wool are the main products; 650 sq.m.; pop. '75, 14,219; in '80, 14,752. Co. seat, Alma.

BUFFALO (*ante*), city, a port of entry, and the seat of justice of Erie co., N. Y., in 42° 53' n., 78° 55' w., at the foot of lake Erie, at the mouth of the Buffalo river and at the head of Niagara river, which is here crossed by an iron bridge. The city has a water

front of about 5 m., running $2\frac{1}{2}$ m. along the shore of the lake, and $2\frac{1}{2}$ m. along Niagara river. It is connected with Goderich on lake Huron by the Buffalo and Lake Huron railroad; with Detroit by the Great Western railway; with Toronto and Montreal by the Grand Trunk railway. The climate is pleasant and healthful; the streets, broad and generally lined with trees, are well paved, lighted, and supplied with sewers. There are many fine residences with attractive grounds, and numerous squares and public places. A combination of parks and pleasure grounds has been laid out, extending to over 500 acres. It comprises three sections, situated respectively in the northern, western and eastern parts of the city, which, with the connecting boulevards, afford a drive of nearly 10 miles. In population Buffalo is the third city in New York, and the thirteenth in the United States. It was founded in 1801, became a military post in 1813, and was burned by the British on the last day of the same year. After the war the place was rebuilt, and in 1832 it attained the rank of a city. In 1820, it contained 2095 inhabitants. After the opening of the Erie canal in 1825, its growth was rapid, the population being 8653 in 1830; 18,213 in 1840; 42,261 in 1850; 81,129 in 1860; 117,714 in 1870; 134,238 in 1875, and 154,766 in 1880. A portion of the river front is a bold bluff 60 ft. above the lake and the Erie canal, which passes near it. There are 5 public squares. Niagara, Lafayette place, Washington, Franklin, and Delaware place. The principal streets are Main street, about 3 m. in length, Niagara street, 4 m., and Delaware street, 3 miles. The most important public buildings are the city and county hall, a granite structure, erected at a cost of over \$2,000,000, in the form of a double Roman cross with a tower 245 ft. high; the United States custom-house and post-office; the state arsenal; the Erie co. penitentiary, which is one of the 6 penal establishments of New York; and the state asylum for the insane, an edifice which cost about \$3,000,000, and has a front of 2700 ft. and a capacity for 600 patients. There are 76 churches, the most imposing edifices being St. Joseph's cathedral (Roman Catholic) and St. Paul's (Episcopal). The churches are divided among the various denominations as follows: 18 Roman Catholic, 11 German Lutheran and Evangelical, 10 Episcopal, 10 Methodist, 9 Presbyterian, 8 Baptist, 4 Mission, 2 Jewish, 1 French Protestant, 1 Congregational, 1 Unitarian, 1 Universalist, and 1 Friends'. The Forest Lawn cemetery in the suburbs contains 75 acres, tastefully laid out. There are 9 daily newspapers, 5 in English and 4 in German, 10 weeklies, and 7 periodicals issued monthly. The educational institutions comprise a state normal school, 50 public schools with an average of 253 teachers and 21,808 pupils, and a number of collegiate schools and academies. Among other educational institutions are Canisius college, founded by the Jesuit fathers; St. Joseph's college, conducted by the Christian brothers; Martin Luther college (theological); St. Mary's academy and industrial school for girls; and the medical college of the university of Buffalo. The charitable institutions of the city are numerous. The Buffalo orphan asylum, founded in 1835, occupies a fine building in Virginia street. The St. Vincent's asylum for orphan girls is under the care of the sisters of charity. The St. Joseph's asylum for orphan boys, founded by the Roman Catholic church, has a reformatory institution connected with it. The church charity foundation (Episcopal) supports a home for aged and destitute females opened in 1858, and an orphan ward organized in 1866. The St. John's orphan home is under the care of the Evangelical Lutheran church. The Ingleside home was organized in 1869 for the purpose of reclaiming erring women. Among other charities are the St. Mary's asylum for widows, foundlings, and infants; the Buffalo general hospital in High street; the Buffalo association for the relief of the poor; and a homeopathic hospital founded in 1872. B. has 3 national banks, 6 state banks, and 5 savings banks. The Young Men's association has a library of 30,000 volumes, and real estate valued at about \$250,000. This society owns St. James hall, which is greatly in demand for concerts and lectures; and their large library building is occupied by the Buffalo historical society with its large library and cabinet; by the society of natural sciences, which has made an extensive collection of minerals and fossil casts; by the academy of fine arts; and by the mechanics' institute. The Young Men's Christian union and the German Young Men's association have good libraries. The Grosvenor library contains about 15,000 volumes of valuable reference works.

The city government is composed of a mayor, a common council of 26 members (2 from each of the 13 wards), a treasurer, controller, city attorney, superintendent of education, city engineer, overseer of the poor, and 3 assessors. It is often claimed that B. is the healthiest city of the United States, having the best water and the most complete sewerage; its water-supply is procured from the Niagara, through a tunnel extending almost to the middle of the river. The police department, with a force of 174 men, is under the control of a board of three commissioners. The city has a paid fire department, 3 volunteer hook-and-ladder companies, and a volunteer protection company; a fire and police alarm telegraph, with 70 m. of wire, 68 signal-stations, and 27 alarm-gongs. The telephone has been introduced and extends to various parts of the city. The gas of B. is supplied by three private companies. There are several lines of street railroads. The total debt of the city in 1879 was \$7,514,264.72; the assessed valuation of property was \$88,876,545; (real estate, \$80,929,165; personal property, \$7,947,380).

The position of B. on the great water and railway channels of communication between the west and the east gives it a large commercial importance. Its harbor is capacious,

and is protected by extensive breakwaters. The city is the center of an important system of railroads; it is the eastern terminus of the Lake Shore and Michigan Southern railroad, of the Canada Southern, and a branch of the Grand Trunk railroad of Canada; it is the western terminus of the Erie canal, the New York Central railroad, and a division of the Erie railway; and other lines converge here. There is a board of trade, organized in 1844 and incorporated in 1857. The immense quantities of grain moving from western states to the sea-board constitute the most important feature of the commerce of the city. The facilities for handling and storing it are unexcelled by those of any other city on this continent. The first grain elevator was built in 1843 by Joseph Dart, and thirty years from that date, in 1873, there were 32 elevators, with a capacity for handling 3,000,000 bushels a day. The record of receipts and exports is as follows: receipts, 1836-45, 41,851,483 bushels; 1846-55, 174,717,437 bushels; 1856-65, 432,390,318 bushels; 1866-75, 571,255,254 bushels. During the same length of time the exports kept pace with the receipts. Many of these elevating warehouses are costly structures of stone, or of iron and brick; several of them have grain "driers" attached. The live stock trade of B. is second only to the grain trade, but will probably exceed it before long. For the accommodation of this branch of business the New York Central railroad company has built large yards in the eastern suburbs; these yards are well sheltered, paved, watered, and taken care of with strict regard to cleanliness. In the amount of this business this city has third rank among the cities of the United States. B. has a large trade in anthracite and bituminous coal, received from Pennsylvania and distributed both e. and w.: great improvements have been made lately for handling and shipping this article. The rapid growth of the coal trade may be seen from the fact that the lake shipments westward during the season of 1879 amounted to 612,976 tons against 325,676 tons in 1878. The lumber and timber trade is large, although want of harbor and proper storage has driven a great part of it to Tonawanda on the Niagara river, about ten miles below Buffalo. The receipts in 1879 amounted to 207,531,000 ft., exceeding those of 1878 by 30,000,000 feet.

The manufacturing interests of B. are extensive, and have grown with marked rapidity in recent years, especially the manufacture of iron, which is carried on in more than 30 large establishments, employing 5000 men. The leading establishments are blast furnaces, rolling-mills, foundries, breweries, tanneries, manufactories of agricultural implements, and flour-mills. Of the last-named there are eleven, with a yearly capacity of 839,000 barrels; the average annual production of flour being about 250,000 barrels. Wooden ship building was formerly carried on here, but it has been superseded by iron ship building. Two extensive establishments are devoted to this industry; these have constructed the finest lake steamers, besides supplying the government with a number of iron revenue vessels.

BUFFIER, CLAUDE, 1661-1737; a French psychologist and metaphysician, for the most of his life a lecturer in the Jesuit college in Paris. His best known work is *Traité des Vérités Premières*, in which he intended to discover the ultimate principles upon which all knowledge is based. He wrote also on the elements of metaphysics, and a French grammar on a new plan.

BUFORD, JOHN, 1826-63; b. Ky.; graduate of West Point, was capt. of dragoons in 1859. In the war of the rebellion he served on the union side, and was one of the most conspicuous and useful of cavalry officers, participating in many engagements, in one of which he was wounded. He rose to maj. gen. of volunteers.

BUGHIS, or BUGIS, a Malay people in the island of Celebes. The merchants of these people do much of the trade of the island and the neighboring seas. Their government is an elective monarchy, the chief ruler being chosen by the nobles and the higher classes. He holds power only during good behavior, and may at any time be voted out of office. The people are represented as being orderly, peaceable, and well behaved; good good workers in iron, copper, cotton, etc.; constructing good houses and durable ships. Their language has been reduced to writing, and they use the common divisions of the year. They also use the magnetic compass and charts. Half a century ago they were represented as cannibals, but they were conquered by the Macassars and compelled to embrace Mohammedanism. In recent years they have settled colonies of their own people in some of the adjacent countries.

BUHLE, JOHANN GOTTLIEB, 1763-1821; a German scholar and historian of philosophy; a graduate of Göttingen; at an early age occupied a professor's chair at Brunswick. Thence he went to Moscow as professor of ancient languages, and on his return to Brunswick took the chair of natural law, which he held during his life. He edited *Aratus*, and a part of *Aristotle*, and wrote a hand-book of history and philosophy, and a useful history of modern philosophy.

BULL, BERNARDO, d. 1520; a Spanish Benedictine monk, in 1493 sent by the pope as apostolic vicar to the new world, accompanying Columbus on his second voyage. In 1495, he returned to Spain, and was one of the foremost in pressing charges against the unfortunate discoverer.

BITENZORG, a t. in Java, 66 m. s. of Batavia, with which it has railway communication. It is in a fine situation, 800 ft. above the sea, and is a favorite residence

for Batavia's rich men. The country palace of the governor-general is one of the chief buildings, and there are a mansion for the regent, a garrison church, and mosques. The botanical gardens, laid out in 1817, are among the best in the world. In the neighborhood is a sacred forest held in great veneration by the natives.

BULAMA, the most easterly of the Bissagos islands off the w. coast of Africa; 11° 34' n., 15° 33' w.; 18 by 9 m.; fertile and heavy wooded, but insalubrious. There is a good harbor. An English colony was sent here in 1792, but nearly all soon fell victims to the climate.

BULAU, or **TIKUS**, *Gymnura rafflesii*, vig., an animal in Sumatra, of the mole family resembling the opossum. The body is 12 to 14 in. and the tail 9 or 10 in. long. It is about 5 in. high at the shoulder; color black and white, with a black stripe over each eye; the fur mixed with long bristly hairs, and tail nearly naked. It feeds on insects, and secretes a strong odor of musk.

BULGARIAN LANGUAGE, the richest of the old Slavic tongues, used by the Græco-Slavic church, and the chief medium of religious writings in that region. After the fall of the Bulgarian kingdom, about 1500 A.D., the language became mixed with neighboring dialects and lost its purity. In the older literature are found translations of the Bible made in the 10th century. The literature of the present time is of small account, being only such as is found in elementary and doctrinal works. Grammars and dictionaries have been published since 1835, and a New Testament was issued in 1840 for the British and foreign Bible society. The language lives in many native songs, but is not as yet printed anywhere in the country.

BULGARUS, the most celebrated of the famous "four doctors" of the law school of Bologna. He was a native of that city, and was regarded as the Chrysostom of the gloss writers. He lived to a great age, becoming childish before his death in 1166. B. was one of the most trusted advisers of the emperor Frederick I. The commentary *De Regulis Juris* is his most celebrated work.

BULMUS, a genus of land snails most numerous in the moist parts of Brazil. *Bulimus oratus*, sometimes 6 in. long, is sold in the Rio Janeiro markets. It has an oblong turreted shell of unequal margin, and lays large eggs nearly an inch long, resembling those of birds, but very brittle, which it protects by a covering of dried leaves. There are many fossil species. The species of temperate regions are small.

BULKLEY, PETER, 1583-1659; b. England; the earliest minister in Concord, Mass. He was his father's successor at Woodhull, England, but was removed for non-conformity, and in 1635, with a number of other emigrants, founded the Concord settlement. He wrote several Latin poems, and a work called *The Gospel Covenant Opened*, published in England. His son Edward succeeded him in the ministry.

BULL. See *Ox*, *ante*.

BULL, JOHN, 1563-1628; an English organist and composer. He was appointed organist in the queen's chapel in 1591, and next year made doctor of music in Gresham college. Not understanding Latin, he was especially permitted to lecture in English. He visited the continent, and had many offers of honorable and lucrative positions, but declined all, returning to England to be organist to James I. On another visit to the continent he became organist to the cathedral in Antwerp, where he died. The claim that he composed the English national anthem has not been sustained.

BULL, JOHN, a familiar synonym for the English people. Its origin is attributed to dean Swift, but Arbuthnot first gave it literary currency in his *History of John Bull* (1712), a political allegory intended to satirize the duke of Marlborough, and to increase feeling against the war with France. In art John Bull is well known as a burly country squire, impetuous, honest, narrow-minded, dogmatic, and easily imposed upon.

BULL, OLE BORNEMANN (*ante*), d. 1880; came to New York the first time in 1843. He became attached to this country, taking a great interest in its republican form of government. Returning to Norway, his American ideas offended the government, resulting in many lawsuits and the dissipation of his wealth. His wife, a Parisian lady, died; and in 1852, after an absence of 7 years, he came again to this country. Here he put into practice a scheme long contemplated, which, like most of his business speculations, resulted disastrously. He purchased 120,000 acres of land in Pennsylvania, and attempted to found there a colony of his countrymen. He designed a castle for his permanent home, and erected it on the summit of a mountain, from which there was a commanding view. Before the castle was completed the colonists grew discontented, and about the same time he learned that the title to the land which he had purchased was worthless. Ole Bull relinquished everything, and again had recourse to his violin to repair his bankrupt fortunes. All that remains as a reminder of his grand scheme is the village of Oleana, named after him, which clusters around the base of the mountain capped by the once lordly castle known to this day as "Ole Bull's Folly." After a profitable European tour, he returned to this country, and has made his home since 1869 in Cambridge, Mass. In 1870, he made a happy marriage with a young Minnesota lady. His form was tall and erect even to old age. He was gifted with a remarkable memory and with social qualities by which he made and retained many friends. On his seven-

tieth birthday, which occurred in Feb., 1880, a surprise party was given in his honor at his home in Cambridge, at which many literary celebrities of the vicinity were present. He was then, to all appearances, strong and healthy. Early in the summer he sailed for his summer residence in Norway, where he died.

BULL, GOLDEN, applied to the decree of Charles IV. of Germany, published in 1356, to fix the laws for the election of emperors and regulate the number of electors. A similar edict by Andrew II. of Hungary (1222), for similar purposes bears the name.

BULLHEAD (*ante*), a popular name applied to several species of fresh and salt water fish found in the eastern parts of America, and belonging to the genera *cottus* and *acanthocottus*. The common B., often called the "sculpin," is well known to anglers for its scarecrow form and colors. They are voracious, devouring small fish, crabs, decayed flesh, etc., and frightening away such fish as they cannot eat. They vary greatly in size, but are usually small, and seldom used for food.

BULLITT, a co. in n. Kentucky, on Salt river and Rolling fork, intersected by the Louisville and Nashville, the Bardstown, and the Lebanon branch railroads; 250 sq.m.; pop. '70, 7681—1194 colored. Productions chiefly agricultural. Co. seat, Shepherdsville.

BULLOCK, a co. in s.e. Alabama, on the Conecuh river, the Mobile and Girard, and the Montgomery and Eufaula railroads; 750 sq.m.; pop. '70, 24,474—17,257 colored. Productions, corn, cotton, etc. Co. seat, Union Springs.

BULLOCK, a co. in s.e. Georgia, between the Ogeechee and Cannouchee rivers; 900 sq.m.; pop. '70, 5610—1744 colored. It is level, with poor soil, in large part covered with pine forests, and abounding in game. Corn, cotton, and sweet potatoes are raised. Co. seat, Statesborough.

BULL RUN, a small stream in n.e. Virginia, falling into the Occoquan about 25 m. s.w. of Washington, the site of two important battles early in the war of the rebellion. The first battle took place July 21, 1861, the national forces commanded by gen. McDowell and the confederates by gens. Johnson and Beauregard. The forces were about 28,000 for McDowell and very nearly the same number on the other side, though not more than 18,000 union men were actually in the conflict. Until about 4 p.m. the advantage was evidently with the union side; but at that time an impetuous charge from Beauregard's whole line turned the tide, and the union army was completely routed and fled as best they could across the stream to Centreville, where a council of war was held and a retreat to Washington determined upon. The union loss was: killed, 481; wounded, 1011; missing, 1430. The confederate loss was: killed, 378; wounded, 1489; missing, 30.

On the 29th and 30th of Aug., 1862, the second battle was fought, gens. McDowell and Pope commanding the union forces, with gens. Lee, Jackson, and Longstreet on the other side. On the last day the unionists were defeated and fell back to Chancellorsville, where they suffered another repulse, and then retired to Washington. The forces engaged were about 35,000 union, and 46,000 confederate. No complete report of the union losses was given, but the figures for killed, wounded, captured, and missing are put at 11,000; Lee reported the confederate loss to be 1090 killed, and 6514 wounded, but the report was incomplete, others making the total loss 8400. The confederates call these engagements the "first and second battles of Manassas."

BULLS AND BEARS, a common designation in the stock market for two classes of operators; the "bulls" being those who seek to advance prices, and the "bears" those who endeavor to bring them down. A fanciful derivation of the term is that a bull tosses up with his horns, while a bear tears down with his claws.

BULL-TERRIER, a cross-breed of the regular bull-dog and various kinds of terriers, having more docility than the bull-dog and all the sagacity of the terrier. The bull-terrier is a favorite house-dog, noted for watchfulness and its intense enmity to rats.

BÜLOW, HANS GUIDO von, a celebrated pianist and composer, was b. at Dresden, Germany, Jan. 8, 1830. His father, a well-known author, who intended that he should study law, and was very much opposed to his adopting music as a profession, refused to support him after he had given up his law studies at Berlin. He was assisted by Liszt, who recognized his talent, and Richard Wagner secured him a position as leader of orchestra at a theater in Zurich in 1850. During the year 1851-52 he devoted himself to the study of the piano at Weimar, under the tuition of Liszt. In 1852, he made his first appearance in public as a pianist; edited the *Neue Zeitschrift für Musik*, and composed his famous overture to *Julius Caesar*, which was performed with great success. In 1855, he became leading professor in the conservatory of music at Berlin, and in 1857, married Cosima, daughter of Liszt, from whom he was divorced in 1869. In 1875, he came to this country and made a very successful concert tour. He never plays his own pieces at public performances, although his compositions are very numerous and often chosen by other artists. His larger works number over 30, and he has composed many songs and choruses. He is considered one of the leading pianists of modern times.

BULWER-LYTTON, EDWARD ROBERT, Earl, only son of the English novelist, b. 1831; educated by private tutors; went into diplomatic service in 1849 under his uncle, sir Henry, who was then British envoy to the United States; afterwards served diplo-

matically at Florence, Paris, the Hague, Vienna, Copenhagen, Athens, Lisbon, Madrid, and again at Vienna and Paris. He succeeded to his title on the death of his father in 1873. In 1874, he was sent again to Lisbon as ambassador, and in 1876 was viceroy of India, where, Jan. 1, 1877, he presided at the ceremonial proclamation of Victoria as empress of India. In literature he is widely known, first as "Owen Meredith," the author of many poems, the chief of which is *Lucile*. Other works are *Tannhauser, or the Battle of the Bards*; *Neville Temple*; *Julian Fane*; songs of Servia; *The King of Amasis*; *Chronicles and Characters*; *Ordeal, or the Fool of Time*; imitations in verse from various languages; *Fables in Song*, etc.

BUNCOMBE, a co. in s.w. North Carolina, n.e. of the Blue Ridge, on French Broad river and the Western North Carolina railroad; 450 sq. m.; pop. '70, 15,412—2303 colored; in '80, 21,640. The surface is rough, but the soil is fertile and good for cattle-raising. There are warm springs in the n.w. part. Corn, wool, and tobacco are the chief productions. Co. seat, Ashville.

BUNO'DES GEMMA'CEA, a species of the order actinoida. See ANEMONE, SEA, *ante*.

BUONAFEDE, APPIANO, 1716-93; an Italian philosopher and general of the Celestines; author of several works on philosophical themes.

BUONAROTTI, MICHAEL ANGELO. See MICHAEL ANGELO, *ante*.

BUPALUS AND ATHENIS, Greek sculptors, 540 B.C., in the isle of Chios. They were brothers, and sons of Anthemus, also a sculptor. As they produced only draped figures, it is inferred that the art had not advanced so far as to attempt nude subjects. It is said that B. made a caricature of the poet Hipponax, who was naturally intensely ugly, and that the poet retorted by verses that drove the sculptor to suicide.

BUPHONIA, or DIPOLIA, a religious festival held in Athens on the 14th July, when the very old ceremony of sacrificing an ox to Zeus was observed.

BURBAGE, or BURBADGE, RICHARD, d. 1619; an English actor, son of James, also an actor. Richard was the first person to receive license as a player (1574), and was for many years a business and professional associate of Shakespeare, acting "Richard III.," "Proteus," and other leading characters.

BURBRIDGE, STEPHEN GANO, b. Ky., 1831; bred to the law, but engaged in mercantile business and farming. When the war of the secession began, he entered the union service, and was distinguished for bravery in many engagements. He resigned after the close of the war, with the rank of brevet brigadier.

BURDEKIN, a river in n.e. Australia, in the colony of Queensland, about 350 m. long, falling into Upstart bay.

BURDEN, HENRY, 1791-1871; b. Scotland; son of a farmer; came to the United States in 1819, and the next year made the first cultivator used in agriculture in this country. His inventions include improvements in plows, a machine for making iron spikes, and one for fashioning horseshoes which produced 60 shoes per minute from the bar. He was agent and afterwards proprietor of the Troy iron and nail works, one of the largest manufactories in the world. He devoted much attention to steam navigation, and built, in 1853, a steamboat which from its shape was called the "cigar boat," but it was lost before its speed had been fairly tried.

BURE, or BUR, a mythical being who stands in Norse mythology as the grandfather of Odin, the supreme deity in that religion. The larger portion of Snorro Sturleson's work known as the *Younger or Prose Edda* (in distinction from the poetical or *Elder Edda*) is devoted to the *Fooing of Gylfi*, and these two older and younger Eddas correspond in that old heathen religion very nearly to the old and new testaments in Christianity. It is not in place here to tell all the strange adventures of Gylfi in his search for the origin of things, but only so far as concerns Bure. Gylfi (who was a king of Svithiod, or Sweden) journeyed to Asgard (the home of the gods) in search of knowledge, and the gods, knowing of his coming and his purpose, were ready to answer him. After he had been satisfied about the gods, their number and attributes, Gylfi asked about their origin. He was told that, many ages before the earth was made, Niflheim (the nebulous or shadowy region) was formed; that in the middle of Niflheim was a spring called Hvergelmur (the roaring cauldron), from which twelve rivers flowed. When the rivers had flowed far from their sources the venom which they rolled along hardened, as does the dross that runs from a furnace, and became ice. The ice stood still, and the vapor that gathered over it froze into rime, or frosty-snow, and in this manner were formed in Ginnunga-Gap (the yawning abyss, or all space) many layers of congealed vapor, piled one upon another. But the southern part of Ginnunga-Gap was filled with sparks and flashes of fire that flew into it from Muspellheim (the home of elemental fire). In the conflict of elements the rime was melted and the melted drops took a human semblance, and the being thus formed was named Ymir (the primordial giant). Another creature formed from this conflict of heat and cold was a cow named Audhumla (darkness), and from her teats ran four streams of milk, on which Ymir was fed. "But," asked Gylfi, "on what did the cow feed?" The answer was that she supported herself by licking the surrounding stones, which were covered with hoar-frost and salt. The

first day she licked there appeared the hair of a man; the second day the head came to view; and the third day the whole man appeared. This man was called Bur or Bure ("born," whence old German "barn," and Scottish "bairn," a child). This first creature in the form of a man was the father of Bør (also meaning born), who took for his wife Besla, the daughter of the giant Bolthorn (calamity or evil), and this pair were the parents of Odin, the Norse allfather, and his brothers Veli and Ve. No wife is named for Bure, nor is anything further related of him.

BUREAU, a co. in n.w. Illinois on the Illinois river; 800 sq.m.; pop. '70, 32,415; level and fertile, with little timber; the chief business is agriculture. It is intersected by the Chicago and Rock Island and other railroads. Co. seat, Princeton.

BURGDORF (Fr. BERTHOUD), a t. in Switzerland, on the Emme, 14 m. from Bern. It is over 1800 ft. above sea level, and consists of a lower and an upper part, which are connected by spiral streets. There are an ancient castle, a town-house, hospital, library, etc.; also ribbon, tobacco, and chocolate manufactories, and a large trade in dairy products. In 1384 the town and countship were purchased by Berne for 37,000 florins, and the Bernese magistrates held rule until 1798. Pestalozzi had his school in the castle for a number of years. Pop. '70, 5078.

BURGERSDYK, or BURGERSDICIUS, FRANCIS; a Dutch logician, 1590-1629. He was professor of logic and moral philosophy, and afterwards of natural philosophy, at Leyden. His *Logic* was a valuable work; *Idea Philosophiæ Moralis* was a posthumous publication.

BURGES, TRISTAM, LL.D., 1770-1853; b. Mass.; a lawyer, and head of the Rhode Island bar; in 1815, chief justice of the state. In 1816, he was professor of oratory in Brown university; in 1825, elected to congress, where he served ten years. He was a ready, witty, and sarcastic speaker, and had many sharp discussions with the equally ready and sarcastic John Randolph. In 1839, he published *The Battle of Lake Erie, with Notices of Commodore Elliott's Conduct*.

BURGESS, DANIEL, D.D., 1645-1712; an English dissenting divine, who openly avowed Presbyterian principles, and, in Ireland, frequently preached in defiance of the severe laws against non-conformity. He was imprisoned, and upon release went to London, where he soon gathered a large congregation by ardent zeal and the witty and ludicrous illustrations he used in his sermons. He was tutor of Henry St. John, afterwards lord Bolingbroke.

BURGESS, GEORGE, D.D., 1809-66; b. R. I.; graduate of Brown university and tutor therein, afterwards studying in Germany. In 1834, he was rector of an Episcopal church in Hartford, Conn., and in 1847 became bishop of Maine, officiating also as rector of a church in Gardiner. He published *The Last Enemy Conquering and Conquered*; *Sermons on the Christian Life*; and a metrical version of a portion of the Psalms.

BURHÁNPUR, a t. in British India, 280 m. n.e. of Bombay, 21° 31' n., and 76° 20' e.; 2 m. from the railway station of Lalbagh. It was founded in 1400, and was the chief seat of the government of the Deccan provinces of the Mogul empire until 1635. In 1861, it was ceded to the British government. Pop. '72, 29,303. B. is celebrated for its muslins, flowered silks, and brocades.

BURIATS, a Mongolian people in the vicinity of lake Baikal. They are scattered in various tribes that take the names of their special localities; and the tribes are subdivided according to kinship. In 1857, the B. numbered about 190,000. They have high cheek-bones, flat noses, and sparse beard on the chin; they shave the head, leaving a cue at the top, like the Chinese. In summer they dress in wool and cotton; in winter in sheep-skins and furs. Rearing cattle is their chief occupation, and some of them possess large herds. A few tribes engage in agriculture, and in 1839 the B. had about 240,000 acres under cultivation. The soil is fertile, and they have an elaborate system of irrigation. Some activity is shown in trapping and fishing. In religion they are mainly Buddhists; their chief lama living at Goose lake. Some are Shamanists, and their sacred spot is the Shamanist stone at the mouth of Angar river. About 10,000 are Christians. Reading and writing are general among the B., and they have books of their own, translated from the Thibetan. Their language is Mongolian, and in three distinct dialects. The Russians first explored the region in 1631, and after several unimportant contests permanently subdued the B. before the end of the 17th century.

BURKE, a co. in e. Georgia, on the Savannah river and the Central Georgia railroad; 1040 sq.m.; pop. '70, 17,639-13,436 colored; in '80, 27,130. Surface hilly, with fertile soil, producing corn, sweet potatoes, and cotton. Co. seat, Waynesborough.

BURKE, a co. in w. North Carolina, on the Catawba river and the Wilmington and North Carolina railroads; 450 sq.m.; pop. '70, 9777-2314 colored. Surface mountainous, with fine scenery; productions agricultural. Co. seat, Morgantown.

BURKE, Sir JOHN BERNARD, b. 1815; son of John, who started the genealogical books known as *Burke's Peerage*, etc., and continuing the work after the father's death. He was called to the English bar in 1839, and was knighted in 1854. He has published, besides the *Peerage and Baronetage*, *History of Dormant, Abeyant, Forfeited, and Extinct Peerages*; *History of the Landed Gentry*; *Vicissitudes of Families*, and other works.

BURLAMAQUI, JEAN JACQUES, a writer on natural law. He was professor and lecturer in Geneva, and was elected to the council of the state. His works are upon the principles of natural and political rights, and have passed through many editions.

BURLEIGH, WILLIAM HENRY, 1812-71; b. Conn.; printer and editor of several literary and religious journals, among which were the *Christian Witness*, Pittsburg, Penn.; the *Charter Oak*, Hartford, Conn.; and the *Washington Banner*. He published a volume of miscellaneous poems.

BURLESON, a co. in central Texas, on Brazos river; 976 sq. m.; pop. '70, 8072-3021 colored. It has an uneven but productive soil, about two thirds covered with oak forests. Productions, corn, cotton, and wool. Co. seat, Caldwell.

BURLINGAME, ANSON, LL D., 1820-70; b. N. Y.; educated in Michigan and Harvard universities, and practiced law in Boston. He was chosen to the state legislature and the constitutional convention. He was an early worker in the free-soil party when Van Buren was the presidential candidate, and was also a leader in the American party in 1854, and by them sent to congress. His denunciation of Brooks's assault upon senator Sumner provoked a challenge from the South Carolinian, which the Massachusetts member at once accepted, naming rifles as the weapons. Brooks did not fight. Burlingame was a congressman until 1861, and in that year was sent as minister to Austria, where the feeling against him because he had favored Hungarian independence led to a positive refusal to receive him as a diplomatic representative. He was then sent to China, where he was successful in negotiating certain treaties favorable to both countries, and for the first time securing China's recognition of international rights of property, trade, and worship. In 1869, having gained the full confidence of the Chinese government, he was sent as minister of the Chinese empire to Russia, and other European countries, but died soon after entering upon his duties.

BURLINGTON, a co. in central New Jersey, between the ocean and the Delaware river; 600 sq. m.; pop. '70, 53,639. It is level and in some parts fertile, but much of it is sandy and covered with pine forests. Iron ore, marl, and petrified animal remains are found. Chief productions, cereals, potatoes, hay, butter, and wool. The railways are the Camden and Amboy, Camden and Burlington County, Pemberton and Hightstown, and branches of the New Jersey Southern. Co. seat, Mount Holly.

BURLINGTON (*ante*), a city in Des Moines co., Iowa, on the Mississippi; 207 m. w.s.w. of Chicago; pop. '75, 19,937. It is at the junction of several railroads, and is an important business point, having also many manufactories. The business portion is of the river shore, while private residences are on the high bluffs in the rear. It is the seat of Burlington university, and has other excellent schools. There are extensive coal and limestone deposits near by. From 1837 to 1840 it was the state capital.

BURLINGTON (*ante*), a city in Burlington co., N. J., on the Delaware 18 m. above Philadelphia, founded by Quakers in 1677. It is on the Camden and Amboy railroad, and is connected by steamboats with Philadelphia. Among its educational institutions are a college and St. Mary's hall for young women (both Episcopal). There is considerable manufacturing business, and trade by the river and railroads. B. was for a long period the seat of government of the colony of West Jersey, and the last official residence of Wm. Franklin, the governor, at which period and afterwards it had a lucrative West India trade.

BURLINGTON (*ante*), the chief city of Vermont, a port of entry, and the co. seat of Chittenden co., on lake Champlain, 38 m. by rail n.w. of Montpelier; pop. '70, 14,337. The harbor is commodious and safe, protected by a breakwater 900 ft. long; and the location of the city is remarkably fine, both for commerce and charming scenery. Besides the lake navigation, the Central Vermont, Vermont and Canada, Burlington and Lamoille, and Rutland and Burlington railroads give ample means of communication. There is a steam ferry to Plattsburg, N. Y. The lumber trade is the largest single business, but there are marble works, manufactories, and a large local trade. B. is connected with Winooski, a manufacturing suburb, by a bridge over the Winooski river. The university of Vermont, founded in 1791, is on the highest ground in the city; departments of the university are the agricultural college and a medical school. Another educational feature is the Vermont Episcopal institute, organized in 1858. The city is supplied with gas and water; its notable public buildings and institutes are: a U. S. custom house, a city hall, and a court house; 2 Congregational churches; 2 Roman Catholic; Unitarian, Baptist, Episcopal, and Methodist churches; the Fletcher free library; the Mary Fletcher hospital; Lake View cemetery, near lake Champlain, and Green Mount cemetery, overlooking the Winooski valley, the latter containing a creditable monument over the grave of Ethan Allen.

BURLINGTON LIMESTONE, a valuable material for building found in abundance near Burlington, Iowa, and elsewhere along the Mississippi, usually in double beds, the upper one nearly all carbonate of lime, and the lower one containing magnesia. This stone is peculiar for the vast abundance of fossils found in it, especially of crinoidea and corals.

BURMEISTER, HERMANN, b. 1807; a German naturalist; studied medicine and natural history, and in 1842 was appointed professor of zoology in the university of Halle. In 1848, he was a deputy to the Frankfort assembly, and afterwards a representative in the first Prussian chamber. In 1850, he made a survey in Brazil in the interest of science, and visited other parts of South America a few years later. He has published many elaborate works on natural history, travels, etc.

BURMESE WARE, small cups, etc., made of strips of bamboo woven like fine basket work, the interstices being filled with paste made of wood-oil and fine powders, and when sufficiently hardened the surface smoothed with pumice-stone and water. Sometimes they are ornamented with pictures worked in with the varnish.

BURNAP, GEORGE WASHINGTON, D.D., 1802-1859; a graduate of Harvard and pastor of the First Independent church of Baltimore from 1823 until his death. He was the author of many volumes on religious themes, lectures, a life of Calvert, governor of Maryland, etc.

BURNET, a co. in central Texas, on the Colorado river; 995 sq.m.; pop. '70, 3683—353 colored; in '80, 7033. The surface is hilly and rocky, with fertile soil. Marble of various colors, limestone, coal, iron, and petroleum are found. Agriculture is the main business. Co. seat, Burnet.

BURNET, JACOB, LL.D., 1770-1853; a graduate of Princeton, and one of the early settlers of Cincinnati; judge of the Ohio supreme court in 1821, and U. S. senator in 1828. He published *Notes on the Early Settlement of the North-west Territory*.

BURNETT, a co. in n.w. Wisconsin, on the St. Croix river, 1100 sq.m.; pop. '70, 1456. Co. seat, Gordon.

BURNETT, WALDO IRVING, 1828-54; a naturalist and microscopist; b. Mass. He did a great amount of microscopical work within the five years preceding his death. His chief publication was a prizeessay on *The Cell, its Physiology, Pathology, and Philosophy, deduced from Original Observations; to which is added its History and Criticism*.

BURNEY, FRANCES (Madame D'Arblay). See BURNEY, DR. CHARLES, *ante*.

BURNS, FRANCIS, D.D., 1809-63; b. in New York; a colored preacher who became a bishop of the Methodist Episcopal church. In 1834, he was a missionary in Liberia, where, in 1851, he founded the Monrovia academy.

BURNSIDE, AMBROSE EVERETT, b. Ind., 1824; a graduate of West Point, serving in the army until 1853, when he resigned and established in Rhode Island a factory for making a breech-loading rifle of his own invention. In the civil war he served as colonel, and brig. and maj.gen. of volunteers, and was in many important engagements. He resigned at the close of the war, and in 1866 was chosen governor of Rhode Island; was re-elected twice afterwards; in 1875 became U. S. senator.

BUR OAK, *Quercus macrocarpa* (Michx.), a valuable tree for timber, found in the Atlantic and western states; sometimes called the mossy-cup oak.

BURR, AARON, 1716-57; a Connecticut teacher and clergyman; in 1738, pastor of the Presbyterian church in Newark, N. J., and in 1748 second president of the college of New Jersey. He published a Latin grammar, several sermons, and *The Supreme Deity of Our Lord Jesus Christ Maintained*. His wife was a daughter of Jonathan Edwards.

BURR, AARON, son of the clergyman Aaron Burr; b. N. J., Feb. 6, 1756; d. N. Y., Sept. 14, 1836. He was left an orphan before the age of three; graduated at Princeton in 1772; in 1775, went into the army as a private; at Arnold's attack on Quebec, acted as aid to gen. Montgomery, and endeavored to bring off the body of that officer, who fell at his side. He acted as brigade-major to Arnold, and in May, 1776, he became a member of Washington's military family, which he left after a few weeks to become aid to gen. Putnam. In 1777, he was made lieut.col., and won distinction at Monmouth in command of a brigade. In 1778-79, he was stationed near New York, and was for a short time in command of West Point. He was always opposed to Washington, whose military talents he esteemed very lightly. B. resigned in consequence of ill health in the spring of 1779, and three years later married Mrs. Prevost, the widow of a British officer, was admitted to the bar, and began the practice of law at Albany, N. Y. In 1784, and again in 1798-99, he was elected to the state assembly. In 1789, he was appointed attorney-general of the state, and in 1791 was chosen U. S. senator. He was an early, zealous, and unscrupulous partisan leader among the "republicans" (afterwards "democrats"), and the especial rival of Alexander Hamilton, the prominent leader of the federalists. In the presidential struggle of 1800, John Adams (then president), Thomas Jefferson, Charles C. Pinckney, and B. were the candidates, and the votes for Jefferson and B. were equal—73 for each. As the constitution then provided, the person having the greatest number of electoral votes was to be president, and the next highest was to be vice-president. This equal division devolved upon the house of representatives the settlement of the matter, and there each state had one vote only, a majority of all the states being necessary to elect. After a week of balloting, Jefferson was selected the president, B. being vice president. He had been favored by Jefferson for that place from the first, but his ambition

was higher, and he did his utmost to defeat Jefferson, who was the regular candidate of the party. This course politically ruined B.; he was thereafter trusted by no party, though in 1804 the federalists nominated him for governor of New York, the result being his defeat by Morgan Lewis. These disappointments and defeats, added to the intensely bitter character of the partisan warfare of the time, led to the duel (July 11, 1804) in which Hamilton was killed by Burr. For this act, which was then deemed little less than murder, B. was legally disfranchised in New York, and covered with the heavier curse of popular indignation. In the spring of 1805, he started for the western part of the country, bent, as was generally believed, upon establishing a government in the Mexican territories, and possibly comprising a portion of the Louisiana purchase. He bought a large tract of land on Red river, and intimated that the conquest of Mexican states was a part of the plan. It was in the course of these operations that he plundered the famous Blennerhassett (q.v.). President Jefferson caused him to be arrested (Feb. 19, 1807, in Alabama) on a charge of treason, for which he was tried the next month at Richmond, Va. The jury gave a verdict of acquittal, and the next year he visited Europe to raise the means for an attempt upon Mexico. Four years of effort amounted to nothing, and in 1812 he returned in extreme poverty, and began to practice law in New York; but his course had alienated the people, and he could never regain his position in the courts. At the age of 78 he married Madame Jumel, a widow, who had a large estate in the upper part of the city of New York; but they were soon afterward divorced, and B. died in 1836 on Staten island in poverty and utter abandonment, not only because of his political course, but more in consequence of his social character. He had but one legitimate child, a daughter named Theodosia, who became the wife of Joseph Allston, governor of South Carolina. This daughter was probably the only human being except himself whom B. ever really loved; and she sailed from Charleston in the spring of 1812 on a visit to her father (who had just arrived from Europe), but the schooner on which she was a passenger was never afterwards heard of. There have been many stories told of its fate, and three or more dying prisoners have given relations of their part in the robbery and destruction of the vessel, but none have proved trustworthy. The most probable theory is that the schooner foundered off cape Hatteras in a furious storm that came soon after she sailed.

BURRANPOOTER. See **BRAHMAPUTRA**, *ante*.

BURRHUS, or **BURRUS**, **AFRANIUS**, d. 62 A.D.; a Roman prætor who promoted Nero's advancement to the throne. With Seneca's assistance, B. successfully resisted many of Nero's tyrannous acts; he opposed the murders planned by Agrippina, but would not become Nero's accomplice in her assassination or in that of Octavia. This is one story; but another is that he congratulated the royal monster upon the murder of his mother, and had his share of the spoils of Britannicus.

BURRILL, **JAMES**, LL.D., 1772-1820; b. R. I.; graduated at Brown university, and in 1791 began practicing law. From 1797 to 1813, he was attorney-general of Rhode Island; in 1816, chief-justice; and in 1817, senator in congress, where he was an able opponent of the Missouri compromise.

BURROUGHS, **GEORGE**, a graduate of Harvard, and preacher in Falmouth, Mass., in 1676, and in Salem in 1680. He was accused of witchcraft in having "tortured, afflicted, pined, consumed, wasted, and tormented" one Mary Wolcott. Though a man of the most unblemished character, he was condemned and hung at Salem, Aug. 19, 1692.

BURROUGHS, **STEPHEN**, 1765-1860: a native of New Hampshire, who ran away from home when but 14 years of age and joined the army; deserted; became a student at Dartmouth college, where he committed various offenses and escaped; served for a time on a privateer; practiced medicine; taught school; officiated as pastor of a Congregational church until he was convicted of passing counterfeit money and imprisoned at Northampton. He set fire to the jail in hope of escaping, but did not succeed, and was sent to Castle island in Boston harbor, to a prison from which he escaped, with seven others, only to be recaptured. When finally released, he went to Canada, and was for years the chief of a band of counterfeiters. Late in life he was converted and became a member of the Roman Catholic church and a private teacher for the sons of wealthy citizens; and, it is said, "was esteemed and respected by all." His *Memoirs of My Own Life* was once as popular as the life of Jack Sheppard.

BURROWING OWL, or **COQUIMBO OWL**, *Athene cucularia*, a species of owl that lives in the burrows of the prairie dog, or digs a home for itself; and seeks its prey (chiefly small insects) in daylight rather than like other owls in the night.

BURROWS, **WILLIAM**, 1785-1813; entered the U. S. navy in 1779, and served on the Barbary station. In the war with England he commanded the *Enterprise* in the engagement with the *Boxer* off Portland, Me., Sept. 5, 1813. The *Boxer* was taken; but B. was mortally wounded, living only long enough to receive the surrender. The English commander was also killed, and both officers were buried near each other at Portland.

BURRSTONE. See **DURRSTONE**, *ante*

BURSCHENSCHAFT, an association organized by German students for the purpose, originally, of reforming the excesses and outrages customary at the universities of Germany, and to arouse a spirit of nationality by uniting the students of different universities. The first organization of the B. took place at Jena in 1815, and most of the students who became members had fought in the German war of independence; during 1815-17 it spread to Tübingen, Heidelberg, Halle, and Giessen. As it was evident that the students were to be disappointed in the hope that the war would be followed by political reforms, the B. of Jena decided to have a general gathering of the associations, which took place at the Wartburg, Oct., 1817. At this festival all the universities were represented, and in Oct. of the following year, delegates from 14 universities adopted a constitution, which was agreed to by all except the universities of Austria, Göttingen, and Landshut; they adopted the colors of the German empire, black, red, and gold, and resolved to hold annual conventions. In 1819, Kotzebue, the German dramatist, who had been declared by the B. a traitor to his country, was assassinated by Sand. After a conference at Carlsbad, the German government took steps to suppress the B., but without avail; it resulted only in their holding secret instead of public meetings. The original plan of a national B. was revived in 1827; the chief obstacle was the difference of view held by the Germanen, who desired to bring about the unity of Germany by practical and political means, and the Arminen, who laid more stress on the ideal unity of their country and the cultivation of individual powers. The views of these two parties were discussed at the convention of Bamberg in 1827, and in Frankfort in 1831; and, although the Arminen had the larger number of followers, they were obliged to give way to the more energetic Germanen. On the 25th of Dec., 1832, the B. resolved to attain the freedom and unity of Germany by a revolution; all the students were called upon to support the B., whose headquarters were at Frankfort-on-the-Main. The attempt was made at Frankfort in June, 1833, in which nearly 2000 students were implicated. It resulted in the arrest and prosecution of students at all the German universities, and many of them were imprisoned and disfranchised. The students of Vienna, who had never before been connected with the B., took a prominent part in the revolution of 1848.

BURT, a co. in e. Nebraska, on the Missouri river; 500 sq. m.; pop. '76, 4354; in '80, 6977. The Omaha and Northwestern railroad passes through it. Agriculture is the chief business. Co. seat, Tekama.

BURTON, ASA, D.D., 1752-1836; a graduate of Yale in 1777; in 1779 settled as pastor of a Congregational church in Thetford, Vt., where he remained all his life. He published many sermons, and *Essays on Some of the First Principles of Metaphysics, Ethics, and Theology*.

BURTON, WILLIAM EVANS, 1804-60; b. London; son of William George B., author of *Biblical Researches*. He was intended for the church, and received a classical education; at 18 took charge of his father's printing establishment and edited a magazine. From amateur acting he drifted towards the regular stage, and made a successful début at the Haymarket, in 1832. He began also to write dramas, one of which was played simultaneously at five London theaters. In 1834, he came to the United States, where he was always prominent as actor or manager, chiefly in Baltimore, Philadelphia, and New York. In Philadelphia he established the *Gentleman's Magazine*, a literary monthly. His greatest success was in the management of the Chambers street theater, New York, where, with Brougham and others, he produced dramas from several of Dickens's novels. His own forte was low comedy, and some of his characters were so established in public favor that no actor has satisfied an audience in them since his death. Such were "Captain Cuttle," "Toodles," "Micawber," "Aminadab Sleek," "Paul Pry," and others. He was a fine scholar, and had a superior library, particularly of Shakespearian literature. He was for several years the editor of the *Literary Souvenir*, and published in two vols. a *Cyclopædia of Wit and Humor*.

BUSBECQ, ANJER GHISLEN DE, a Flemish diplomat, 1532-92. He was engaged in many important negotiations, and twice sent by the emperor Ferdinand I. to the court of Constantinople. In 1562, he was made tutor to Maximilian II. in Vienna. He wrote *Discourse of the State of the Ottoman Empire*, and a *Relation of My Two Journeys to Turkey*.

BUSCH, JOHANN GEORG, 1728-1800; a German philanthropist and statistician, professor of mathematics in the Hamburg gymnasium. He established an association for the promotion of art and industry, and a school of trade, the latter becoming especially famous. He wrote largely upon the history and theory of trade and commerce, and on questions of political economy.

BUSENTO, a river of Salerno, Italy, emptying into the bay of Busento. This is the stream that was turned from its channel by the followers of Alaric, who buried that great leader in the original bed of the stream and then restored the water to its natural course so that no enemy could find the grave.

BUSII, GEORGE, D.D., 1796-1859; b. Vt.; a graduate of Dartmouth college and Princeton seminary; ordained in the Presbyterian church, and four years a missionary in Indiana. In 1831, he was appointed professor of Hebrew and oriental literature in

New York university. In 1832, he published a *Life of Mohammed*, and the next year a work on the millennium, in which he held that the beginning of the millennial age was marked by the triumph of Christianity over Roman paganism. He also wrote a Hebrew grammar, and seven volumes of commentary on the Old Testament. In 1844, he conducted *The Hierophant*, devoted to the explanation of prophetic symbols, and published a work in which he opposed the idea of a physical resurrection of the body. In 1845, he united with the New Jerusalem church, and began to translate Swedenborg's works. In support of these doctrines, he edited the *New Church Repository*. His latest work was *Priesthood and Clergy unknown to Christianity*.

BUSHMEN, or **BOSJESMANS**; so named by the Dutch colonists, but calling themselves **SAAB**, or **SAAN**; an aboriginal race of s. Africa, somewhat like, and yet differing from, the Hottentot, but like them having nothing in common with the Kaffer or negro. They rank with the savage of Australia among the lowest existing types of mankind, and are in a most degraded and destitute condition. They are of small stature, of dirty yellow color, and very repulsive features. The cheek-bones are large and prominent, the eyes deep set and crafty in expression, nose small and depressed, and the hair in small woolly tufts with bald spaces between. Of 150 measured by a traveler, the tallest man was 4 ft. 9 in., and woman 4 ft. 4 in. Some are well proportioned, active, and capable of enduring great privations and fatigue. Those furthest n., near lake Ngami, are considerably larger in body. They clothe in skins and are fond of ornaments, decorating their arms and legs with beads and rings, and the women sometimes paint their faces red. They dwell in huts of reed or in holes in the ground; in the mountain districts they live among the rocks with mats for shelter. They have no cattle, nor any animals except a few half-wild dogs, nor have they the least signs of agriculture; but as they live by hunting they are well acquainted with the habits of animals, and follow the herds of antelope in their migrations. Their weapons are bows and arrows, the latter tipped with bone or iron, and poisoned with vegetable matter mixed with the venom of snakes or spiders, or the entrails of an extremely poisonous caterpillar are used alone. On account of the use of these fatal poisons the B. are held in dread by neighboring tribes. The discovery of their rude tools for digging tubers, scattered over wide regions not now occupied by them, indicates the existence of greater numbers of B. in earlier times. They have no approach to tribal organization, nor any chiefs; bodily strength forming the only distinction of superiority. Their various dialects are not understood by the Hottentots, the tongue of the latter being more agglutinative, that of the B. more monosyllabic; the Hottentots use gender in names, while the B. do not. The Hottentots can count 20; the B. only 2—calling all above that "many." The B. possess a pictorial faculty not known in any other south African tribe, and the rocks of the Cape Colony and Drakenberg mountains show many examples of Bushman drawings of men, women, children, and animals. Rings, crosses, and other signs, drawn in blue on rocks and stones, and believed to be centuries old, have given rise to the suggestion that these may be the remains of hieroglyphic writing; and the discovery of drawings of men and women with antelope heads, also very ancient, recalls the mythological figures of Egypt. The B. have a kind of intelligence, and are valued as servants by the Boers, being much more energetic than the Hottentots. A wholesale destruction of B. on the borders of the colony in earlier years, reduced their numbers greatly; and though this hunting of them has ceased, their children are still captured by the Boers for servants. The B. retaliate by ravaging the farms on the border and driving off cattle. As they once occupied a much larger area, it seems probable that the B. are the remains of the earliest aborigines of s. Africa, and that they existed there before the Kaffers, and perhaps before the Hottentots. A former and more general distribution of the race is indicated by the discovery in late years of undersized people near the upper Nile basin and on the western equatorial coast land by Dr. Schweinfurth and Du Chaillu.

BUSHNELL, HORACE, D.D., 1802-76; b. Conn., graduated at Yale in 1827, where he studied law and theology; in 1833, became pastor of the North Congregational church in Hartford. He was a voluminous writer on theological subjects; some of his works being *Principles of National Greatness*; *Christian Nurture*; *God in Christ*; *Christian Theology*; *Sermons for the New Life*; *Nature and the Supernatural*; *Work and Play*; *Christ and His Salvation*; *Woman's Suffrage*, *the Reform Against Nature*; *The Vicarious Sacrifice*. He was also a writer for various periodicals and newspapers. He was a bold and original thinker, with peculiar eloquence of style. Though strongly evangelical in belief, he denied the Calvinistic theory of the atonement (known as the "satisfaction theory"), and gave less than the ordinary emphasis to the distinction between the persons in the Trinity. These, with other divergences, led to his being accused of heresy; but ultimately the fellowship of the Congregational churches was found broad enough to include him, and he kept his standing therein with growing influence until his death. During his later years his health compelled his relinquishment of the active pastorate, but his labors in authorship were unintermitted. While his theory of the atonement has not commended itself in its exact form to the majority of evangelical Christians, and is adhered to by no organized sect or party, it cannot be denied that his moral earnestness, his spiritual power, his wondrous suggestiveness, his brilliancy of thought and

style, and his broad mental scope, have profoundly modified the thinking of the present age through almost the whole circle of Protestant denominations. Indeed, with his detestation of all provincialism and sectarianism, he would have chosen any other form of influence rather than that which is exercised by the leader of a party in the church.

BUSHWHACKERS, a term much in use in the war of the rebellion (though well known before) to indicate men who pretended peace or neutrality, but who were ready to make secret attacks whenever opportunity offered. They were numerous in some western states, where many of them were summarily shot as outlaws.

BUSIRIS, an Egyptian t., capital of the B. nomos, in the hieroglyphic language, the "Place of Osiris," believed to correspond to the modern Abusir, and situated about the middle of the delta. It was supposed to be near the entrance of the gates of Elysium. Close to B. was the pyramid of king Sahura, of the 4th dynasty, known as the Sa-ba, or "pyramid of the rising soul." The shrine of the goddess Isis was in B. and a great annual festival and lamentation for Osiris was held there. The place was destroyed by Diocletian, but the Copts and Arabs have preserved the name in Bousiri and Abusir.

BUSIRIS, a mythical king of Egypt mentioned by the later Greek writers. After Egypt had been afflicted for nine years with famine, Phrasius, a seer from Cyprus, announced that the famine would not cease until a foreigner was annually sacrificed to Zeus. B. began by sacrificing Phrasius, and continued the custom yearly; but when he undertook to make a victim of Hercules the latter burst his bonds and with his club slew B. and his son Amphidamas. Attempts to find the place of B. as an actual king have not succeeded. There is no good reason to believe that human sacrifices were ever offered in Egypt.

BUSSEY, BENJAMIN, 1757-1842; served as a private soldier in the revolutionary army; after the war, began business in Boston and accumulated a fortune, most of which, after the death of certain relatives, went to the support of the law and divinity schools in Harvard college, and the founding of a school of agriculture, for which special object he gave a large farm near Boston.

BUSSORA. See BASSORA, *ante*.

BUSTAMENTE, ANASTASIO, 1782-1851; a physician of San Luis Potosi, Mexico. He was among the earliest supporters of Iturbide when the revolt against Spain began in 1821. In 1830, he became vice-president of the republic, exercising the full power of president. He resigned when Santa Anna's revolution of 1832 became successful, and the next year was exiled, living in Europe until 1836, but recalled after the downfall of Santa Anna, and in 1837 elected president. In 1846, he was president of the Mexican congress.

BUTADES (wrongly called Dibutades), a Greek modeler in clay, described as the first who copied the human face in that material. Seeing on a wall a drawing in outline of his daughter's lover, B. molded the face of it in clay, and baked it with the tiles which it was his business to make. The incident led B. to ornament the ends of roof-tiles with faces, a practice largely imitated in after years. He lived about 600 B.C.

BUTE, JOHN PATRICK CRICHTON STUART, third marquis, and reputed hero of Disraeli's *Lothair*. He joined the Roman Catholic church in 1868, and took great interest in furthering religious education, in pursuance of which he, among other enterprises, purchased land, and established near Jerusalem an asylum for pilgrims.

BUTLER, a co. in s. Alabama; 875 sq.m.; pop. '70, 14,981-6391 colored; hilly, and mostly covered with pine woods; produces corn, cotton, etc. The Mobile and Montgomery railroad passes through. Co. seat, Greenville.

BUTLER, a co. in n.e. Iowa, on Cedar river and the Dubuque and Sioux City railroad; 576 sq.m.; pop. '75, 11,734; an agricultural region, mostly prairie. Co. seat, Butler Centre.

BUTLER, a co. in s. Kansas, on the White and Walnut rivers; 1510 sq.m.; pop. '78, 14,175. Agriculture is the chief business. Co. seat, El Dorado.

BUTLER, a co. in s.w. Kentucky, on Green river; 599 sq.m.; pop. '70, 9404-643 colored. Surface uneven, with moderately fertile soil; agriculture the main business. Co. seat, Morgantown.

BUTLER, a co. in s.e. Missouri, on the Arkansas border, w. of St. Francis river; 560 sq.m.; pop. '70, 4298-21 colored. It has a level surface and fruitful soil, producing corn, tobacco, etc. Co. seat, Poplar Bluff.

BUTLER, a co. in e. Nebraska, s. of Platte river; 576 sq.m.; pop. '73, 4730; in '80, 9052; productions agricultural. Co. seat, David city.

BUTLER, a co. in s.w. Ohio, on the Indiana border, intersected by Miami river, the Miami canal, and three railroads; 455 sq.m.; pop. '70, 39,912. Productions agricultural. Co. seat, Hamilton. There are in the co. many interesting monuments of aboriginal inhabitants.

BUTLER, a co. in w. Pennsylvania, near the Alleghany river, drained by the waters of the Beaver; 800 sq.m.; pop. '70, 36,510. The surface is diversified, and the soil

sandy but tolerably good, producing the usual crops. Coal, iron, and limestone are plentiful. Co. seat, Butler.

BUTLER, ALBAN; an English hagiologist, 1710-73. He was educated at the Douay Roman Catholic college, where he was professor of philosophy, and afterwards of divinity. He traveled on the continent, was chaplain to the duke of Norfolk, and president of the English college at St. Omer's, where he died. The *Lives of the Saints* was his great work. It has passed through many editions.

BUTLER, ANDREW PICKENS, 1796-1857; a graduate of South Carolina college, and lawyer of South Carolina. He was in the legislature in 1824, and in 1833 was appointed judge of sessions and afterwards of the supreme court. In 1846, he was chosen U. S. senator. It was Mr. Sumner's reply to B.'s last speech in the senate that led to the assault upon the Massachusetts senator by Preston S. Brooks.

BUTLER, BENJAMIN FRANKLIN, 1795-1858; a native of New York, and law partner of Martin Van Buren. He served in the legislature, and was a member of the commission to revise the statutes. In Jackson's cabinet he was attorney-general, 1831-34, and acting secretary of war, 1836-67. He was afterwards professor of law in the university of New York. He was a leading member of the Democratic party up to the time of the passage of the Kansas-Nebraska bill, after which he acted with the other party.

BUTLER, BENJAMIN FRANKLIN (*ante*), b. N. H., 1818; a graduate of Waterville (Me.) college; admitted to the bar in Massachusetts, and acquired a large practice in Lowell and other cities. He was early in politics as a member of the Democratic party, and by them was chosen to the legislature in 1853. In the same year he was a member of the constitutional convention, and in 1859 was elected to the state senate. On the first call for troops in the secession conflict (April 15, 1861), B., who was a brig. gen. of militia, called out his brigade. On the next day, the 6th regiment left Boston; and on the 18th, B. at the head of the 8th regiment started for Washington by way of Baltimore. Two regiments of his brigade had in the mean time sailed for fortress Monroe, of which they took possession. The burning of railroad bridges prevented B. from reaching Washington directly, and he took possession of Annapolis and repaired the railroad from that city to Washington so speedily, that the 7th New York and the 8th Massachusetts regiments reached the capital in season to prevent any attempt at seizure. In May, he took possession of Baltimore without opposition, and the same month was appointed maj. gen. and given command of fortress Monroe. Here he made the declaration, when requested to return runaway negroes, that the slaves were "contraband of war"—a doctrine that greatly discouraged the secessionists and correspondingly elated the union side, for up to that period there had been no hesitation on the part of the civil or military authorities in doing their utmost to arrest and return fugitive slaves. In the spring of 1862, he commanded the land force of 18,000 men designed to co-operate with Farragut in command of the fleet to operate in the lower Mississippi, and on the 1st of May he took possession of New Orleans, where he remained until relieved by gen. Banks in December. His administration in New Orleans was violently denounced: but he kept order; forced the people to keep reasonably clean streets and so avoided the yellow-fever for one season; compelled the rich secessionists to contribute to the support of those whom their rebellion had reduced to want; and enforced due respect for the flag of the nation. Near the close of 1863, he was put in command of the department of Virginia and North Carolina, and in May, 1864, occupied City Point and Bermuda Hundred in support of Grant's movement upon Petersburg. In October he was sent to New York to assure peace during the election, there being danger of serious trouble. In 1864, he was sent against Fort Fisher, but the enterprise failed, in consequence of a storm, and he returned, contrary to orders, for which he was relieved from command. In 1866, he was chosen member of congress from the Boston district, and in 1868, was one of the managers in the impeachment of president Johnson. From the breaking out of the rebellion until 1876-77, Butler acted with the Republican party; but when the greenback and labor movement began to take shape he favored it, and in 1878 was the candidate of those parties, and of a large portion of the Democratic party, for governor of Massachusetts, receiving 109,435 votes to 134,725 for the successful Republican candidate. He was again a candidate of "greenbackers," labor men, and Democrats, in 1879, but was again unsuccessful.

BUTLER, CHARLES, 1750-1832; a prolific English writer, nephew of Alban. He was educated at Douay, and entered at Lincoln inn in 1775, coming to the bar in 1781. His literary activity was enormous. Among his works were *Reminiscences*; *Horæ Bælica*; *Horæ Juridicæ Subsecivæ*; *Book of the Roman Catholic Church*; and lives of Erasmus, Grotius, and others. He also edited his uncle's *Lives of the Saints*, and completed an edition of *Coke upon Littleton*.

BUTLER CLEMENT M., D.D., b. N. Y., 1810; a Protestant Episcopal minister in Georgetown, D. C., Boston, and Washington; rector of Grace church, Rome, Italy, 1862-64; professor of ecclesiastical history in the divinity school of the Protestant Episcopal church in West Philadelphia. He has published *The Book of Common Prayer*

Interpreted by its History; Old Truths and New Errors; St. Paul in Rome; Inner Rome; Manual of Ecclesiastical History from the 1st to the 18th Century; Sermons, etc.

BUTLER, JOHN, a native of Conn.; d. Canada, 1794; a tory leader in the revolution, commanding a regiment of militia. In 1776, he organized a band of guerillas disguised as Indians, who committed many outrages. He also commanded the men who destroyed Wyoming, Penn., in 1778. After peace he settled in Canada, where he was agent for Indian affairs.

BUTLER, WILLIAM ALLEN, LL.D.; b. N. Y., 1825; a graduate of the university of New York, studied law with his father (Benjamin F. of New York), and traveled extensively abroad before commencing practice. He is the author of several popular satirical poems, among which are *Nothing to Wear; Barnum's Parnassus; and Two Millions*. He has also published *Lawyer and Client*, and a biographical sketch of Martin Van Buren.

BUTLER, WILLIAM ORLANDO, 1793-1880; b. Ky.; served in the Indian battles of 1812, and under Jackson at New Orleans, and after the war practiced law in Kentucky. He was a member of congress, 1839-43, and next year democratic candidate for governor; in 1848 the democratic nominee for vice-president, but not successful. He served as maj. gen. of volunteers in the war with Mexico, and was wounded at Monterey. He was a member of the peace congress of 1861.

BUTO, an Egyptian goddess, deity of the town Buto in northern Egypt. She personified lower Egypt; and, it was believed, presided over fire, and resided in the sun. B. was considered to represent the Greek Latona, and to be the regent of certain districts and cities in Egypt and Arabia.

BUTT, ISAAC, b. 1813; graduate of Trinity college, Dublin, and a member of the Irish bar. He was one of the counsel for Smith O'Brien and others tried in 1848 for treason, and also for the Fenians tried in 1865. In 1852, he was chosen to parliament from Younghall as a liberal conservative; and in 1871 he was returned from Limerick as a "home ruler," and has been to the present time the chief leader and support of the idea which that name involves. He was one of the projectors, and for a time the editor, of the Dublin *University Magazine*. He has also published *Literature of Political Economy; History of the Kingdom of Italy*, and works on the relations of landlord and tenant.

BUTTE, a small hill or knoll, or rising ground; in some places applied to mountains, as the Downieville Buttes in California, which are nearly 9000 ft. high.

BUTTE, a co. in n. California, on the Sacramento and Feather rivers; 1458 sq. m.; pop. '70, 11,403. The surface is rough and well wooded, and the soil fertile. The co. is rich in gold, silver, platinum, cinnabar, lead, and iron. The Marysville branch of the Pacific railroad crosses the w. portion. Wheat, barley, wine, and wool are the chief agricultural productions. Co. seat, Oroville.

BUTTERFIELD, JOHN, 1783-1869; one of the founders of the express business in the United States. Before the time of railroads he was proprietor of many important lines of stage coaches, especially in New York state.

BUTTERFIELD, WILLIAM, b. 1814; an English architect noted as a leader of the "Gothic revival" in England. His work has been chiefly in church and collegiate architecture.

BUTTERMILK FALLS, in Le Roy, Genesee co., N. Y., on Oatka creek, which falls over a limestone ledge 90 ft. high. The same name is given to a cascade in Bog Meadow creek, near West Point, N. Y.

BUTTERNUT, or WHITE WALNUT, *Juglans cinerea*, a large, wide-spreading American tree, with nearly smooth bark, and large leaves. The nuts are well-known, and form agreeable food when dried; when taken green and pickled they are prized for the table. Sugar can be made from the sap, but it is much inferior to that made from maple. The timber is useful for coach and cabinet work, posts, rails, and wooden bowls.

BUTTON, Sir THOMAS, the successor of sir Henry Hudson in the exploration of the n.e. coast of America. In 1612-13, he was frozen in and wintered on the w. coast of Hudson's bay. The next summer he explored all the coasts of the bay, returning to England in the autumn.

BUTTS, a co. in central Georgia, on the Ockmulgee; 240 sq. m.; pop. '70, 6941-3435 colored. The surface is uneven, and soil fertile. Productions, corn, cotton, and sweet potatoes. Co. seat, Jackson.

BUXTON, JEDIDIAH, an English prodigy of skill in numbers, b. 1704, and lived about 70 years. Though the son of a schoolmaster and grandson of a vicar, B.'s education was so neglected that he could not write, nor was he at an early period remarkable for knowledge of numbers. He never could tell how his singular power came, or how he used it; but it was observed that when "figuring" his attention was withdrawn from all external objects. He worked out every question by his own methods, without external aid, and without understanding the common rules of arithmetic. He would stride over a piece of land and tell the contents to almost exact measure. In this manner he measured the whole estate of Clinton, some thousands of acres, giving not only the acres but even

the square inches. Then for his own amusement, he reduced the whole to square hair-breadths, on the base of 48 hairs to a lineal inch. His memory was such that he could stop in the midst of an abstruse calculation, and a week or even a month later resume it where he had left off. This mania for figures shut him out from all other knowledge, and on returning from church it did not appear that he had brought away a sentence that had been given out. His faculty was tested before the royal society, where he was presented with a gratuity. While in London he was taken to see Richard III., but his only enjoyment was in counting the number of words spoken by Garrick. He would easily count the steps of a company of dancers, but admitted that the sounds given out by a number of musical instruments perplexed him beyond measure.

BUZZARD'S BAY, on the s coast of Massachusetts, about 30 m. long by 7 wide; sheltered from the ocean by the Elizabeth islands and Vineyard sound. In the bay are the harbors of New Bedford, Wareham, Sippican, Fairhaven, and Mattapoiset.

BY-BIDDING, at auctions where the bidder may be employed by the owner, and really bidding to enhance the price, not meaning to purchase. This form is unlawful; but bidding merely to prevent the sale of property below its actual value is not so considered.

BYLES, MATHER, D.D.; 1706-88; graduated at Harvard, and ordained minister of the Hollis street church, Boston, in 1733. In 1765, he was given the degree of doctor of divinity by the university of Aberdeen. He was a correspondent of Swift and Pope, and published a volume of his own poems. During the revolution he adhered to the English side, and for that reason his connection with his parish was dissolved. In 1777, he was denounced as an enemy to the country, imprisoned for a time, and condemned to exile, but the latter sentence was commuted to confinement in his own house, before which sentinels were placed. His reputation for quick and caustic wit has kept his memory alive.

BYRAM RIVER, a small stream, scarcely more than a brook, which is often mentioned as the farthest western boundary of New England, separating the towns of Greenwich, Conn., and Rye, N. Y. Recent surveys have straightened the boundary line, which, however, still begins at the mouth of the river and follows it a short distance. One mile above its entrance into Long Island sound, the stream widens, receives the tide, and is navigable for the smaller class of vessels to the village of Port Chester.

BYRD, WILLIAM, 1674-1744; b. Va., and educated in England, where he became a fellow of the royal society. Returning to America, he was receiver-general of revenue in Virginia, colonial agent, member of the council, and one of the commissioners to fix the North Carolina boundary. He laid out the cities of Richmond and Petersburg in 1733 on his own land.

BYROM, JOHN, 1691-1763; an English poet and miscellaneous writer. *Colin and Phoebe*, his first poetical essay, appeared in the *Spectator*. He was made a member of the royal society; invented and taught a system of short-hand writing; was a person of lively wit, and had a taste for the mystical theology of Böhme.

BYRON, ANNE ISABELLA MILBANKE, 1792-1860; only child of sir Ralph Milbanke, and wife of lord Byron. She married lord Byron Jan. 2, 1815, and separated from him in Feb. of the next year. On the death of her cousin, the earl of Scarsdale, she became baroness of Wentworth, and for several years before her death employed her large income in works of charity. One child was borne by her to Byron, "Ada, sole daughter of my house and heart," who married William, lord King, afterwards earl of Lovelace.

BYRON, HENRY JAMES, b. Manchester, Eng.; a playwright, author of many dramatic works, chiefly in burlesque, that have won popular favor. Among them are *Fra Diavolo*; *Maid and Magpie*; *Babes in the Wood*; and travesties of many of the more popular operas. Of comedies he has written *War to the Knife*; *A Hundred Thousand Pounds*; *Not Such a Fool as he Looks* (in which he played the hero); *An American Lady*; *Old Sailors*; and *Our Boys*, the last comedy achieving an almost unexampled success.

BYRON, Hon. JOHN, 1723-86; an English admiral and circumnavigator. He was the grandfather of Byron the poet. While young, he accompanied Anson around the world, and in later years experienced so much hard service that he was nicknamed by sailors "Foul-weather Jack." In 1769, he was a governor of Newfoundland, and in 1776 became vice-admiral. In 1778, he was sent with a fleet to watch the movements of count d'Estaing, who had gone to the assistance of the American colonies then in revolution; and in July of the next year, fought the count off Grenada, but the action was of little importance.

BYZANTINE RECENSION, the Greek New Testament used in Constantinople after that city became a see in the eastern church; also used as the basis of the old Slavonic version. It differs very little from the received text.

BZOVIUS, or BZOWSKI, ABRAHAM, 1567-1637; a Polish Dominican, one of the most voluminous writers of his time. He was professor of philosophy and theology at Milan and Bologna. He continued the ecclesiastical annals of Baronius from 1198 to 1532.

C

CABALA. See **CABBALA**, *ante*.

CABANEL, ALEXANDRE, b. 1823; a French painter of mythological and religious subjects, among which are "The Birth of Venus" (of which he made two copies for American patrons), and "Nymph carried off by a Faun." He is a member of the French academy, and a professor in the school of fine arts.

CABARRUS, a co. in s.w. North Carolina, on the N. C. railroad, watered by Rocky river; 350 sq.m.; pop. '70, 11,954—3929 colored. Soil moderately fertile, producing corn, wheat, cotton, etc. Co. seat, Concord.

CABARRUS, FRANCISCO DE, 1752—1810; a Spanish financier, originator of a bank and company for trade with the Philippine islands. He was one of the council of finance under Charles III., and proposed many reforms. Under Charles IV. he was accused of embezzlement and imprisoned, but soon after was released and made a count. Bonaparte made him a minister of finance, in which office he died. His daughter Thérèse, under the name of Mme. Tallien, afterwards princess of Chimay, was conspicuous in the closing days of the French revolution of 1789.

CABEÇA DE VACA. See **NUÑEZ ALVAR**.

CABELL, a co. in s.w. West Virginia, on the Ohio river at the Chesapeake and Ohio railroad, watered by Guyandotte river. It is hilly but fertile, producing corn, tobacco, etc. Co. seat, Barboursville.

CABEN'DA, or **KABINDA**, a seaport in Loango, lower Guinea, on the Atlantic, at the mouth of the Livingstone, 5° 30' south. It is one of the few salubrious places on the coast. Pop. 16,000.

CABINET (see **MINISTRY**, *ante*), in political affairs, the heads of departments who are the immediate advisers or counselors of the chief executive. In the United States government the cabinet consists of the secretaries of state, treasury, war, navy, and interior, the attorney-general and the postmaster-general. They meet whenever desired by the president, but not publicly. No minutes are kept of their doings, nor are the names of those present recorded. The president presides; and he may at any time require in writing the opinion of any of the members upon matters concerning his department. But the cabinet has no responsibility, as that rests with the president alone.

CABIRI, or **CABEIRI**, divinities worshiped in Egypt, Phenicia, and other countries, but of which worship or its purpose little is known. The worship was observed yearly and the ceremonies lasted nine days, always in secret, though women and children were admitted. In Lemnos all the fires were extinguished, sacrifice for the dead was offered, and a sacred vessel was sent to Delos to procure new fire, which was distributed among the people, and with its kindling they began a new or regenerated life, free from sin.

CABOCHIENS, certain butchers of Paris, named from their chief Jean Caboche, who were partisans of John of Burgundy against the Armagnacs. In 1418, their outrages provoked the people of Paris to rise against them.

CABOT, GEORGE, 1751—1823; b. Mass.; in early life a ship captain, but in 1776 chosen to the Massachusetts provincial congress. He was also in the state constitutional convention, and in 1789 was chosen U. S. senator. He was offered but declined the position of secretary of the navy. His last political act was to preside over the Hartford convention.

CABOTVILLE. See **CHICOPEE**, *ante*.

CABRAL, FRANCISCO, 1528—1609; a Portuguese Jesuit missionary at Goa, and superintendent of the mission schools in India. He also labored in Japan with success, and had the supervision of missions in China. He was for nearly 40 years at the head of the Roman Catholic school in Goa.

CACHE (a hiding-place), usually a cavity, natural or artificial, in the ground or among rocks, where voyagers and explorers stow provisions or records, to be found by themselves or others. If containing provisions, the cache needs to be very strong to resist the depredations of animals.

CACHE, a co. in n.e. Utah, on the Idaho frontier, watered by Bear river; 700 sq.m.; pop. '70, 8229; in '80, 12,686. Productions agricultural. Co. seat, Logan.

CACHE'O, or **CACHEU**, a t. in Senegambia, w. Africa, in the land of the Papels, a few miles from the mouth of San Domingo or Cachoa river; pop. 15,000. It is a Portuguese fortified post, and has trade in ivory and gold dust.

CACHICAMA, or **TATOU-PEBA**, *Dasypus novem-cinctus*, an armadillo in tropical America, covered with horny plates. It is about 1½ ft. long, harmless, and easily tamed. Its food is ants and other insects.

CACHOEIRA, or CAXOEIRA, a t. in Brazil, in the province of Bahia, and 62 m. n.w. of the city of Bahia; pop. 15,000. It has a town-house, a prison, a Carmelite convent, and several churches. Its trade is in tobacco, coffee, and sugar.

CACTUS. See CACTEÆ, *ante*.

CACUS, in legend, a gigantic son of Vulcan, who dwelt in a cave on mount Aventine and continually vomited fire and smoke. He stole cattle from the people and drew them backward into his cave, so that their tracks would not point to his abode. He was slain by Hercules for stealing the cattle of Geryon.

CADA MOSTO, LUIGI DA, a Venetian navigator of the 15th c., who, with others, in 1455, explored the w. coast of Africa as far south as the river Gambia. He wrote an account of his voyages in the *Book of the First Voyage over the Ocean to the Land of Negroes in Lower Ethiopia*.

CADASTRAL SURVEY is one which represents objects in their true relative positions and dimensions, as they exist on the face of the country, differing thus from a topographical survey, which, for distinctness, enlarges certain objects, as the dimensions of houses, width of roads, streams, etc. The usual scale of a map of C. S. is about 2 ft. to a mile.

CADDO, a parish in n.w. Louisiana, bordering on Arkansas and Texas; 1200 sq. m.; pop. '70, 21,714—15,799 colored. Productions, corn, cotton, sweet potatoes, etc. The Texas Pacific railroad passes through the parish. Principal town, Shreveport.

CADDOES, or CADODAQUIOS, Indians in or near Texas on the upper Red river and lake Caddo. There are but a few hundreds left of a once large tribe.

CADET (*ante*). All students at the United States military academy and naval academy have this title; and there are also medical cadets recognized as a distinct rank.

CADILLAC, ANTOINE DE LA MOTHE, d. 1719; a French peer and an officer in America, who came to Nova Scotia in 1691; commanded at Michilimackinac, 1691-97, and in 1701 founded Detroit. He was governor of Louisiana, 1712-17, where he had much trouble with the Indians.

CADIZ, a province in s. Spain, in the ancient division of Andalusia; bounded n. by Seville, e. by the Mediterranean, s. by the straits of Gibraltar, and w. by the Guadalquivir; 2806 sq. m.; pop. '70, 426,499. It is a mountainous region, traversed by the Sierra Nevada, and but partially cultivated. The wines of the province are especially fine. The western part is traversed by the Seville and Cadiz railroad.

CADWALADER, GEORGE, b. Penn.; bred to the law; served as brig.gen. in the Mexican war and maj.gen. of volunteers in the war against the rebellion.

CADWALADER, or CADWALLADER, JOHN, 1743-86; b. Penn.; a member of the Pennsylvania convention of 1775, and brig.gen. in the revolutionary war, participating in the engagements at Brandywine, Germantown, Monmouth, and Trenton. After peace he was a member of the Maryland assembly.

CÆCILIUS STATIUS, d. 168 B.C.; a Roman comic poet and dramatist, of whose works few fragments remain. The people ranked him with Plautus and Terence, as among the first of comic writers.

CÆLIUS AURELIANUS, a physician of Numidia in the latter days of the Roman empire, and author of a valuable medical work. He divided disease into two great classes, acute and chronic, devoting his work of ten books to their elucidation.

CÆLIUS MONS, one of the seven hills of Rome. See ROME, *ante*.

CÆRE. See CERVETERÉ, *ante*.

CÆSALPINUS, or CÆSALPINO, ANDREAS, 1519-1603; an Italian philosopher of whose family or descendants nothing is known. He first appears as professor of botany in the university of Pisa, where he seems to have studied, and perhaps taught, anatomy and medicine. In his first work, *Speculum Artis Medicæ Hippocraticum*, he left proof, in a passage often quoted, that he had a clear idea of the circulation of the blood, at least through the lungs. In botany he was more original, and his works are highly philosophical and valuable, being a rich mine from which Linnæus, Morrison, and others took their ideas of botanical arrangement. He died in Rome in attendance upon pope Clement VIII.

CÆSAR, Sir JULIUS, 1557-1636; an English statesman, educated at Oxford and the university of Paris; doctor of civil and canon law. He was master of the rolls, and held other high offices under Elizabeth and James I. He was noted for a gracious dignity of character, and for wide beneficence to the poor.

CÆSUR'A, a pause or division in a verse; a separation by the ending of a word, or by a pause in reading, of syllables rhythmically connected, as in this line: "These parting num-bers, ca-denced by my grief."

CAF, or KAF, the mountain, or range of mountains, that in Arabic and Persian fiction surrounds the earth. The pivot on which the mountain rests is a great emerald from which the sky receives its colors, and the mountain is the dwelling-place of giants and genii. "From Kaf to Kaf" signifies from one to the other end of the world.

CAFFARELLI, or GAFFARELLI, GAËTANO MAJORANO, 1703-83; an Italian vocalist who, when a boy, was properly qualified for singing feminine parts and was deemed the first soprano of the age. He was highly successful for many years, having no rival excepting possibly Farinelli; and he had success as a composer also. On returning to private life he built a palace, over the entrance of which he inscribed: "Amphion built Thebes; I this house," alluding to the story that the walls of Thebes rose without hands to the music of Amphion's lyre.

CAGLI, a walled t. in the province of Urbino, Italy, at the confluence of the Cantiano and Busso, where there is an old Roman bridge over the former river. It is a bishop's seat, and has several monasteries, in one of which is a famous fresco by Giovanni Sanzio, the father of Raphael. Leather manufacturing is the chief business. Pop. 10,213.

CAGLIARI, a province of Sardinia, occupying the s. part of that island; 5224 sq. m.; pop. '72, 393,208. The district is rough and mountainous, but the cultivation of grain and cattle-breeding are successfully prosecuted. There are mines of silver, lead, and iron.

CAHAWBA, a river rising in Jefferson co., Ala., flowing s.w. through a region rich in coal, and joining the Alabama 8 m. w. of Selma. The C. is navigable by small craft for about 100 miles.

CAHEN, SAMUEL, 1796-1862; a French Jew noted as a Hebrew scholar. He translated the Old Testament into French with Hebrew on opposite pages, and with notes and comments. He also founded the *Archives Israelites*, a monthly publication devoted to Jewish questions and interests.

CAHINCA, the Indian name of the plant known in Brazil as the *raiz petra*, used by the natives as a purgative, emetic, or diuretic medicine.

CAIAPHAS, high-priest of the Jews in the reign of Tiberius Caesar, at the beginning of Christ's ministry, and also at the time of his trial and crucifixion. His wife was the daughter of Annas, a former high-priest, who still had great influence in sacerdotal matters. In the council summoned by the chief-priests and Pharisees to take action upon the remarkable spread of the doctrines of Jesus, Caiaphas, was decidedly in favor of putting him to death, using the prophetic language: "Ye know nothing at all; nor consider that it is expedient for us that one man should die for the people, and that the whole nation perish not." Christ was arraigned before Caiaphas, when the effort to convict him on false testimony failed; and then the prisoner was called as a witness and asked if he was indeed the Christ, the son of God. The answer being in the affirmative, the high-priest pretended to be sorely grieved at what he considered blasphemy, and appealed to Christ's enemies to say if that was not enough. The answer was that Christ deserved death, and without remonstrance from the high-priest, they at once fell upon the prisoner with insult and injury. But the high-priest had not the power of final condemnation, that being in the hands of the Roman governor only.

CAILLIAUD, FRÉDÉRIC, 1787-1869; a French goldsmith who traveled in various parts of Europe, Egypt, and Asia Minor. He was engaged by Mehemet Ali to explore the deserts along the Nile and near the Red Sea, and in the work discovered the emerald mines of Mt. Zabarah. He returned to France with a valuable collection of antiquities, plants, and minerals, and published *Voyage a l'Oasis de Thebes*, etc. He went again to Egypt and made explorations in the eastern deserts, making an expedition to upper Nubia with Ismael Bey. In 1819-22, he published *Voyage a Meroe*. Among the relics of antiquity brought by him to France and purchased by the government, was a mummy, inscribed with hieroglyphical characters accompanied with a Greek translation, which proved of great help to Champollion in the study of the ancient language.

CAIMACAN', or KAIMAKAM, a Turkish officer corresponding with lieutenant or lieutenant-governor. The caimacan of Constantinople is the lieutenant of the grand vizier, whom he represents in processions. Such officers also act as governors in the principal towns.

CAIRD, JAMES, b. 1816; an agriculturist of Scotland, author of *High Farming as the Best Substitute for Protection*. In 1850-51, he visited all parts of England as agricultural writer for the *London Times*, his letters being afterwards published in a volume. In 1858, he visited the United States and wrote an account of the western territories. While in parliament he was the originator of agricultural statistics, now annually published by the British government. Since then he has been a magistrate in the co. of Wigton.

CAIRNES, JOHN ELLIOTT, 1824-75; b. Ireland; educated at Trinity college, studied law, and was admitted to the Irish bar, but passed most of his time in writing for the press, chiefly upon economical questions affecting Ireland. In 1856, he was appointed professor of political economy in Dublin, and the next year his professional lectures were published under the title *Character and Logical Method of Political Economy*. He next wrote for *Fraser's Magazine* a series of essays on the gold question, induced by the sudden increase of supply from California and Australia. In 1861, he was appointed professor of political economy and jurisprudence in Queen's college, and in the next year published his work on *The Slave Power*. His conclusions were to a large extent veri-

fied by the results of the war in the United States then just commenced. In 1866, he was appointed professor of political economy in University college, London. His later years were spent in collecting and publishing his numerous papers, and in writing his chief work, *Some Leading Principles in Political Economy, newly Expounded*. He is regarded as high authority on subjects connected with political economy.

CAIRO, a city in Alexandria co., Ill., on the extreme southern point of the state, at the junction of the Mississippi and Ohio rivers, 147 m. by rail s.e. of St. Louis; pop. '70, 6267; in '80, 9926. The Illinois Central railroad ends here, and connects by ferry with the Mobile and Ohio railroad at Columbus, in Kentucky. All the steamers of the Ohio and Mississippi make C. a stopping-place. It is a port of entry, and has a fine custom-house, and some other handsome buildings. The founders of C. anticipated its becoming the largest and most important city in the Mississippi valley, but the location was unhealthy, and the land so low that costly dikes were necessary to protect it from inundation; and even these did not suffice, for in 1858 the city was nearly destroyed by a flood. Since then, however, ample protection has been provided.

CAISSE, a coffer, box, case, or chest; in finance, a cash-box, or pay-office, or fund for payments. In anatomy, the drum of the ear. The French call a savings bank, "caisse d'épargne."

CAISSON (*ante*), in engineering, a hollow box of iron or wood, open at the bottom, sunk where piers are to be placed. The largest caisson yet sunk was for the tower of the Brooklyn bridge on the New York side. At the bottom it was 172 ft. long and 102 ft. wide, with an air-chamber $9\frac{1}{2}$ ft. high, the roof 22 ft. thick, and the sides carried up 82 ft. from the lower edge. It had a coffer-dam in the upper part; was built of timber lined with boiler-iron, and bolted together. In its construction there were used of lumber, board measure, 4,200,000 ft., and of iron, including bolts, 620 tons. When completed, it weighed 13,271 tons, and there were 20,000 tons of masonry laid within it. There were two double air-locks extending into the air-chamber, in which were steam-pipes to keep an even temperature. Two shafts passed up through well-holes in the masonry, with an elevator in one, and two spiral stairways in the other. Below the lowest edge of the caisson extended two water-shafts, each $7\frac{3}{4}$ ft. in diameter, in which dredges and scoops grappled the stones and soil, raising their loads to cars above, which conveyed the refuse away. At the same time sand and fine dirt were blown out by air-pressure through 40 or more pipes in various parts of the structure. The interior was illuminated by gas, and constant communication by telegraph was kept up with the workmen inside. There were four shafts, each 2 ft. in diameter, for the introduction of material for the concrete with which the whole interior was finally filled. The caisson was sunk 78 ft. below mean tide, a work that required a pressure of 34 lbs. per sq. inch, in addition to the normal pressure of air; and to supply this addition, 13 large compressors were used. The earliest caissons for such purposes were used in England in 1738-40 in laying the foundations of the Westminster bridge over the Thames.

CAJAMARCA. See CAXAMARCA, *ante*.

CAJATAMBO, a province in the department of Junin, Peru; 1500 sq.m.; pop. 24,750. The region is mountainous and comparatively barren, with a severe climate. There are many remains of ancient towns, aqueducts, etc. The chief town, of the same name, has a pop. of about 3200, and is in a fertile plain at the foot of the Andes, 140 m. n.n.e. of Lima. The people are employed in spinning wool for sale at Lima.

CAJETAN, or GAETANI, BENEDETTO. See BONIFACE VIII., *ante*.

CAJETAN, TOMMASO DE VIO, 1469-1534; an Italian priest of the Dominican order, and the general of that order. In 1517, Leo X. sent him as legate to induce Maximilian of Germany to join in the league against the Turks, and especially to bring the Lutherans back to allegiance to the church; but C.'s arrogant manner defeated the purpose for which he was sent. When Rome was taken by the imperialists in 1527, he was made a prisoner, but he bought his freedom for 5000 crowns. He made a translation of the Old Testament with commentary, and wrote a treatise on the authority of the pope which was answered by the faculty of the university of Paris.

CALABOZO, a t. in Venezuela, 120 m. s.s.w. of Caracas, in the plain w. of the river Guarico; pop. 6000. It is an important point for commerce, but is subject to inundations and extremes of heat. The town has a college and a number of schools.

CALAIS, a city and port of entry in Washington co., Me., on St. Croix river at the head of tide water, and opposite to St. Stephen in New Brunswick; the most northeasterly seaport in the United States; 75 m. n.n.e. of Bangor; pop. '70, 5944. The river is crossed by several bridges, and the New Brunswick and Canada railroad touches at St. Stephen. The St. Croix and Penobscot railroad from C. to Bangor is partially built. There is a tide at C. varying from 20 to 30 ft. and steamers of the largest size come and go freely. The St. Croix also furnishes abundant water-power, to which is due the great lumber trade of the city. Nearly 100 mills are engaged in making boards, laths, shingles, etc. Ship-building is also an extensive business, and there are foundries, machine shops, and dry dock, flour mills, and many other branches of mechanical industry. Among the chief buildings are a city hall, an opera house, and a dozen

churches. The city was nearly destroyed by fire in Aug., 1870, since which time it has been rebuilt in a more substantial manner.

CALAMATTA, LUIGI, 1802-69; b. in Milan; an engraver who became famous by an engraving of the head of Napoleon taken after his death at St. Helena; and also for an engraving of Ary Scheffer's "Francesca da Rimini." His widow, Josephine, is a painter of religious subjects.

CALAMBUCO, a tree found only in the n. part of the island of Luzon, considered superior to teak or live oak for shipbuilding. It is dark and hard, like teak, and is proof against the destructive white ant of the Malay region. Warlike, mechanical, and agricultural tools and implements are made from it. The same name applies to the tree that furnishes the eagle-wood and aloes-wood of commerce, found in Siam and Sumatra. The resin which it yields, is supposed to be produced by some disease in the tree, and is used in eastern countries for incense.

CALAMICHTHYS, a cylindrical and extremely slender ganoid fish in the waters of w. Africa, allied to the polypterus of the Nile.

CALAMIS; 467-429 B.C.; a sculptor of Greece, who made statues in bronze, ivory, gold, and marble; also famous for his representations of horses.

CALAMY, EDMUND, D.D., 1600-1666; an English non-conformist clergyman, who arranged for the press *Baxter's Life and Times*, and wrote *Defense of Modern Non-conformity*; *The Non-conformists' Memorial*; and published many sermons.

CALAND, or KALAND, a brotherhood of Roman Catholics devoted to charitable and devotional works, dating from the 13th c., and of considerable extent in Germany, Switzerland, and France. It degenerated so far that it was suppressed before the reformation, its property being confiscated for public purposes.

CALAND, PIETER, b. Holland, 1826; an engineer, and son of an engineer; author of works on encroachments of the sea, and the effect of the sea on rivers; but better known for his improvements in the communication of Rotterdam with the ocean, whereby he replaced a tortuous and difficult route by one easy and direct.

CALANUS, a Hindu philosopher, whose real name, according to Plutarch, was Splines. He was for some time in the camp of Alexander the great, but having become seriously ill, he was burned alive at his own request.

CALASIO, MARIO DE, 1550-1620; an Italian scholar, doctor of theology and professor of Hebrew in Rome, who made a Hebrew dictionary and grammar. He devoted 40 years of his life to a great work called *Concordantie Sacrorum Bibliorum Hebraica*, which was published after his death.

CALAVERAS, a co. in n. California, on the Calaveras, Stanislaus, and Mokelumne rivers, and the Stockton and Copperopolis railroad; 936 sq.m.; pop. '70, 8895-1441 Chinese. Gold and copper mining are the leading occupations, with agriculture. The grove of big trees is in this county. Co. seat, San Andreas.

CALAVERAS, a river in n. California, running from the Sierra Nevada w. to the San Joaquin, on the border of Sacramento county.

CALCAREOUS SPRINGS, springs charged with calcareous matter which is deposited in the form of incrustations. Such deposit is called calcareous tufa, and takes the form of other substances inclosed, such as leaves, twigs, and branches of trees. When freshly quarried it is easily shaped, and is therefore convenient for building. The temples of Paestum are of this material, and the stone has acquired great solidity and strength. In central New York such deposits are common, forming the marl below swamps and in the bottoms of ponds. One of these springs at Clermont, France, has formed a deposit of white concretionary limestone 240 ft. long, 16 high, and 12 wide.

CALCAR, or KALCKER, JOHN DE, 1499-1546; a painter, disciple of Titian at Venice, and perfected by studying Raphael; so good an imitator of Titian that his works can scarcely be distinguished from those of that master. One of his pieces is a "Nativity" representing angels around the infant Savior, so arranged that the light by which they are seen comes wholly from the child.

CALCASIEU, a parish in s.w. Louisiana, on the gulf of Mexico and Texan border; 5000 sq.m.; pop. '70, 6733-1457 colored; in '80, 12,381. The surface is level in broad savannahs, and the soil very productive in corn, sugar, molasses, and cotton. Chief town, Lake Charles Court-house.

CALCASIEU, a river in Louisiana, about 200 m. long, running into the gulf of Mexico. Near its mouth is a broad expansion called C. lake. The river is not navigable.

CALCHAS, a Greek soothsayer in the time of the Trojan war who foretold the length of the siege, and when the fleet was detained at Aulis by adverse winds, demanded the sacrifice of Iphigenia. He is said to have died from vexation on being surpassed in prophecy by another soothsayer called Mopsus.

CALCRAFT, WILLIAM, d. 1879; the official executioner or hangman of London; a person of quiet and even gentle manners, who was looked upon by the ignorant as some

fearful being quite out of the natural order of humanity. As public executions were stopped in 1860 his fame declined, and little was heard of him except through the exaggerated reports of the ignorant. The price for hanging is fixed in Britain at 14s. 6d., of which 7s. 6d. is the fee, 4s. 6d. for stripping the body, and 2s. 6d. for the use of the shell (coffin). C. received that price regularly; he made much more by traveling expenses, perquisites, etc. He died in financially comfortable circumstances. Bull, (pseudonym unknown), the first English hangman whose name survives, lived in the 16th century. The first person hanged in England was Maurice, a nobleman's son. He was executed in 1241, for piracy. Before C., Jack Ketch was the most famous of executioners. He executed, among others, lord William Russell and the duke of Monmouth. C. had retired from office some years before his death on account of advancing age.

CALDA'NI, LEOPOLDO MARCO ANTONIO, 1725-1813; an anatomist and physician, b. at Bologna, assistant to Morgagni, the celebrated anatomist of Padua, after whose death C. was chosen his successor in the professorship. At the age of 76 he published a valuable series of anatomical plates. He had long before published *Elements of Pathology and Physiology*.

CALDER, Sir ROBERT, 1745-1815; a Scotch baron of an ancient family, second son of sir Thomas Calder of Muirton. He served long and honorably in the British navy, and as captain of the fleet took part in the battle off cape St. Vincent in 1797, for which he received a baronetcy and the thanks of parliament. He was a rear-admiral in active service during the expected invasion of England by Napoleon, received both praise and blame, and was tried by court-martial. He was acquitted of disaffection and cowardice, but reprimanded for not having done more to renew an indecisive engagement. Three years before he died he was restored to command.

CALDWELL, a co. in w. Kentucky; 250 sq.m.; pop. '70, 10,828-2076 colored; generally level, and good pasture land. Iron and coal are found. Chief productions, corn, tobacco, wool, etc. The Elizabethtown and Paducah railroad is projected through this county. Co. seat, Princeton.

CALDWELL, a parish in Louisiana, on the Washita river: 528 sq.m.; pop. '70, 4820-2224 colored. Surface hilly, producing corn, cotton, etc. Chief town, Columbia.

CALDWELL, a co. in n.w. Missouri, on the Hannibal and St. Joseph railroad; 435 sq.m.; pop. '70, 11,390-284 colored; in '80, 13,645. Products, corn, wheat, oats, butter, wool, etc. Surface level, and soil rich. Co. seat, Kingston.

CALDWELL, a co. in n.w. North Carolina, on Catawba river and the Western North Carolina railroad; 450 sq.m.; pop. '70, 8476-1380 colored. Surface rough and partly mountainous, including a portion of the Blue Ridge. Productions, corn, wheat, oats, and tobacco. Co. seat, Lenoir.

CALDWELL, a co. in s.e. Texas, e. of the San Marcos river; 535 sq.m.; pop. '70, 6572-2531 colored; in '80, 11,821. Main business agriculture and stock-raising; an undulating surface, well wooded and fertile. Co. seat Lockhart, near which are about 20 springs of some celebrity.

CALDWELL, a village and seat of justice of Warren co., N. Y., in a delightful situation at the s. end of lake George—a place much frequented by tourists. Near by are the ruins of fort St. George of the French and Indian and revolutionary wars, and on the site of fort William Henry is an immense hotel. Pop. of township, '75, 1267.

CALDWELL, CHARLES, 1772-1853; a native of N. C., celebrated as a physician, and writer on medical subjects. He published Blumenbach's *Elements of Physiology* translated from the Latin, edited the *Port Folio*, edited Cullen's *Practice of Physic*, published the *Life and Campaigns of General Greene*; was professor of medicine in Transylvania university; made a tour in Europe; established medical institutions in Louisville; wrote *Memoirs of the Rev. Dr. Horace Holley*, and left his own memoirs ready for publication after his death.

CALDWELL, JAMES, 1734-81; a native of Va.; graduated at the college of New Jersey; became pastor of the Presbyterian church in Elizabethtown. He was a zealous patriot during the revolution, and became obnoxious to the tories of the region, who, in 1780, burned his house and church. Soon afterwards a British force from Staten Island fell upon the village of Connecticut Farms, where C.'s wife and children were temporarily resident, and the wife was killed by a shot while praying with her children. It is of C. that the story is told of his distributing hymn books to the soldiers short of wadding, with the exhortation "Now, boys, put Watts into them." C. was shot and killed by a patriot sentinel at Elizabethtown Point during a dispute about a package that the soldier declared it his duty to examine. The soldier was tried by the civil authorities for murder, convicted, and executed. A fine monument to "The Soldier Parson" was dedicated at Elizabethtown on the 64th anniversary of his death.

CALDWELL, JOSEPH, D.D., 1773-1835; a native of N. C.; graduated at the college of New Jersey, and a tutor there from 1791-96; then chosen professor of mathematics in the North Carolina university, and in 1804 was made president and professor of moral philosophy. He wrote a *Treatise on Geometry* and letters on internal improvements.

CALEDONIA, a co. in n.e. Vermont, on the New Hampshire border, intersected by the Connecticut and Passumpsic River railroad; 650 sq.m.; pop. '70, 22,247. It is an agricultural region, with streams that furnish abundant water-power, and has quarries of granite and limestone, and sulphur springs. Co. seat, St. Johnsbury.

CALEDONIA SPRINGS, in Prescott co., province of Ontario, 40 m. from Montreal. They are strongly alkaline, with additions of bromine and iodine, and are much frequented by persons afflicted with scrofulous, cutaneous, and rheumatic disease.

CALEF, ROBERT, d. April 13, 1719; a merchant of Boston, who wrote *More Wonders of the Invisible World*, in answer to Cotton Mather's book of similar title. C.'s book was so obnoxious to the witch-persecutors of the time, that it was publicly burned at Harvard, by order of Increase Mather, the president of the college, but it was of much value in ending the witchcraft delusion.

CALENDAR, FRENCH REVOLUTIONARY. The French nation, in 1792, while reforming so many other of the world's customs, undertook the task of making a new calendar, professedly upon philosophical principles. The new era began with the republic at midnight of Sept. 21, 1792, and the months, seasons, and festivals were arranged as follows:

AUTUMN.

Vendémiaire.....	Vintage month.....	22 Sept. to 21 Oct.
Brumaire.....	Fog month.....	22 Oct. to 20 Nov.
Frimaire.....	Sleet month.....	21 Nov. to 20 Dec.

WINTER.

Nivose.....	Snow month.....	21 Dec. to 19 Jan.
Pluviose.....	Rain month.....	20 Jan. to 18 Feb.
Ventose.....	Wind month.....	19 Feb. to 20 Mar.

SPRING.

Germinal.....	Sprout month.....	21 Mar. to 19 April.
Floréal.....	Flower month.....	20 April to 16 May.
Prairial.....	Pasture month.....	20 May to 18 June.

SUMMER.

Messidor.....	Harvest month.....	19 June to 18 July.
Fervidor, or Thermidor.....	Hot month.....	19 July to 17 Aug.
Fructidor.....	Fruit month.....	18 Aug. to 16 Sept.

SANSCLLOTIDES, OR FEASTS DEDICATED TO.

Les Vertus... ..	The Virtues.....	17 Sept.
Le Génie.....	Genius.....	18 Sept.
Le Travail.....	Labor.....	19 Sept.
L'Opinion.....	Opinion.....	20 Sept.
Les Récompenses.....	Rewards.....	21 Sept.

This calendar existed until the 10th Nivose, year of the republic XIV. (Dec. 31, 1805), when the old system was restored by Napoleon.

CALEPINO, AMBROGIO, 1435-1511, an Augustine monk who devoted his life to making a polyglot dictionary. The latest edition comprises 11 languages, some of them added by Passerat and others.

CALHOUN, a co. in n.e. Alabama, on Coosa river, and Selma, Rome and Dalton railroad; 1170 sq.m.; pop. '70, 13,980-3892 colored. Surface uneven and in some parts mountainous. Productions agricultural. Marble, limestone, lead, and iron abound, and some gold has been discovered. Co. seat, Jacksonville.

CALHOUN, a co. in s. Arkansas, on the Washita and Moreau rivers; 600 sq.m.; pop. '70, 3853-1100 colored. Surface rolling or level, and soil good; productions agricultural. Co. seat, Hampton.

CALHOUN, a co. in w. Florida, on the gulf of Mexico, w. of Appalachicola river; 461 sq.m.; pop. '70, 998-244 colored. Surface level and fertile, producing corn, tobacco, etc. Co. seat, Abe's Spring.

CALHOUN, a co. in s.w. Georgia; 300 sq.m.; pop. '70, 5503-3477 colored. It is level, with fertile soil, but little cultivated. Co. seat, Morgan.

CALHOUN, a co. in s.w. Illinois, between the Illinois and Mississippi rivers; 260 sq.m.; pop. '70, 6562. Near the rivers the land is low and subject to inundation; in other parts marked by high bluffs and table-lands. Productions agricultural. There are coal-fields in the w. section. Co. seat, Hardin.

CALHOUN, a co. in w. Iowa, on Coon river and the Dubuque and Sioux City railroad; 600 sq.m.; pop. '70, 1602; in '80, 5591. Productions agricultural. Co. seat, Lake City.

CALHOUN, a co. in s.w. Michigan, on St. Joseph river and the Peninsular and Michigan Central railroads; 720 sq.m.; pop. '70, 36,569. Soil rich; surface generally level; productions agricultural. Co. seat, Marshall.

CALHOUN, a co. in n. Mississippi, on the Yallahusha river; 800 sq.m.; pop. '70, 10,561—2000 colored. Productions, corn, cotton, butter, etc. Co. seat, Pittsboro.

CALHOUN, a co. in s.e. Texas, on the gulf of Mexico and including Matagorda island; 684 sq.m.; pop. '70, 3443—907 colored. Surface level, and soil poor with little timber. The San Antonio and Gulf and the Indianola railroads traverse the county. Co. seat, Indianola.

CALHOUN, a co. in w. West Virginia, on the Little Kanawha river; 300 sq.m.; pop. '70, 2939; in '80, 6031. An agricultural region. Co. seat, Grantsville.

CALIFORNIA (*ante*). This name, originally given to a portion of western North America, was apparently taken from a Spanish romance published in 1510, in which the author speaks of "the great island of C., where a great abundance of gold and precious stones is found." The coast of the present C. was explored by Cabrillo, in '542, as far up as cape Mendocino, in 42° north. In 1578, sir Francis Drake, who was plundering Spanish commerce, coasted along as far as 48° n., and landed to refit his ships either in sir Francis Drake's bay or the bay of San Francisco—probably in the former. In 1602, the bays of San Diego and Monterey were discovered by Viscaino, and then came an interval of a century and a half before settlements began to be made. The Jesuits, who had missions in lower C., made some settlements in the present C. about 1760; but in 1767 they were expelled from the country by the order of the king of Spain, and their property was turned over to the Franciscans, who established a number of missions, and prospered well until Mexico became independent (1822); thenceforward they rapidly declined, and in 1840 were broken up altogether. The treatment of the natives by these missions was such as to promote their worldly welfare, but was not especially notable for intellectual improvement; indeed, it is charged that the Indians were little better than slaves under this rule. There were in all 21 missions, the first founded in 1769, the last in 1820. They were all on or near the coast or bay of San Francisco, and the priests displayed excellent judgment in selecting for their settlements the best garden spots in the country. The Indian population was large until about the time of the cession to the United States. In 1734, the Indians drove out the Jesuit missionaries, but they returned very soon and succeeded in collecting and to some extent civilizing many of the natives, so that 40 years ago the "mission" Indians numbered about 30,000. The aborigines in northern C. were much superior to those in the south. Under Mexican rule the Indians were recognized as owners of their lands, but the United States never acknowledged the right, and now the aborigines are homeless. In 1870, there were 29,000 Indians in all the states. The principal tribes were the Klamaths, the Hoopas, the Ukies, the Redwoods, the Tulés, the Tejons, the Siahs, the Wylackies, the Concows, the Wichmunies, the Coweas, and the Yokas.

California was very little known on this side of the continent until within the past 35 years. Half a century ago, about all the trade with C. was from Boston, whose merchants sent out groceries and cotton goods in exchange for furs, the voyage around cape Horn lasting two years or more. Now and then a wandering American or Englishman would settle in C., and a few daring adventurers found their way across the continent, so that by 1830 it was thought there were as many as 500 foreigners w. of the Sierra Nevada.

The territory was once seized by the United States, but was relinquished the next day. This was in 1842, when commodore Jones of the American navy captured the fort at Monterey, and hoisted the stars and stripes; but the next morning he hauled down his flag, and apologized for the mistake. It was about this time that three nations, the United States, France, and England, were looking with peculiar interest at the Californias, upper as well as lower. Both the European powers were suspected of coveting possession, a thing the United States could not tolerate. The result was that about the time war was declared against Mexico, col. Fremont, who was conducting a scientific expedition on the Pacific coast, received—in May, 1846—certain instructions by an officer who had landed from a national ship at Vera Cruz, and crossed the land to Mazatlan; whereupon Fremont abandoned his investigations and made his way to Sonoma, where he organized a battalion of mounted riflemen, and on the 5th of July recommended a declaration of independence. On the 2d of that month commodore Sloat in a United States frigate put in at Monterey, and on the 7th hoisted the stars and stripes with no intention of imitating his predecessor's example by pulling them down. He issued a proclamation declaring C. to be from that time forward a part of the United States. Some little fighting was had with the Californians, and there arose a bitter discussion among army and navy officers concerning their part in the conquest of the country. Fremont brought trouble on himself by obeying the orders of commodore Stockton (who had superseded Sloat) instead of those of gen. Kearney, who ranked him and assumed command. Kearney preferred charges, and Fremont was tried by court-martial, which found him guilty of "mutiny and disobedience of the lawful command of a superior officer." The president rejected the finding as to the mutiny, and remitted the penalty on the other count, but Fremont refused the clemency and resigned.

He afterwards conducted several famous overland expeditions, which met great sufferings, and was so much connected with Californian affairs that the people almost everywhere considered him the real conqueror of the territory.

At the end of the war the annexation of C. to the United States came with the treaty of peace, ratified May 19, 1848, and then the question became pressing whether it should be a free or a slave state—a question hotly discussed long before. Up to the adjournment of congress, on the 4th of Mar., 1849, nothing had been done towards organizing either state or territorial government except making San Francisco a port of entry, and extending the customs and revenue laws over the country. The people of C. then took affairs into their own hands, and in Sept. of that year held a convention, which framed a state constitution in which slavery was expressly forbidden. On the 7th of Sept., 1850, a bill was passed by congress admitting C. as a state without slavery, but leaving New Mexico and Utah (organized into territories on the same day) open to its introduction. This legislation was the “omnibus bill” and a part of the famous compromise measures through which it was hoped that the question of slavery would be permanently settled, or at least removed from discussion in congress.

The discovery of gold at capt. Sutter's mill, in Feb., 1848, attracted towards C. a tide of emigration unparalleled in modern times. From 40,000 a year or two before the war, the white population rose to 323,000 in 1860, and 500,000 in 1870. The gold fever was the phenomenon of the age. The emigrants were nearly all young or middle-aged men, scarcely a hundred women going out for the first year or two. Nine tenths of the adventurers rushed at once to the mines, or prospected for new ones. The organization of society was neglected, and in many places the only law was the momentary decision of the people themselves. Fortunes were made in a day, and the golden stream flowed eastward with steady and rapid increase, so that the gold production of the United States for the 17 years from 1849 to 1875 averaged \$15,600,000 per year. In 1853, the product of the C. mines was \$65,000,000. All property was affected by the fever; lots in San Francisco were worth gold coin enough to carpet them; speculation ran wild; all forms of gambling were recognized as legitimate business; adventurers and criminals flocked in, and society became chaotic. Self-preservation soon demanded order, and the celebrated vigilance committee enforced it. The latest of those committees assumed the proportions of a regular government, and resisted the efforts of the state power to disband it; but formally resigned near the close of 1856, after hanging four culprits, and driving hundreds of the worst from the state.

C., popularly called the “golden state,” is bounded on the n. by Oregon, the line running e. on the 42d degree to the 120th parallel, thence s. to the 39th degree, thence s.e. to the intersection of the 35th degree on the Colorado river, thence along that river to the Mexican or lower Californian boundary about 33° n., and thence direct nearly w. to the Pacific. The extreme length from s.e. to n.w. is about 750 m., and the breadth an average of about 240 m. The area given in the census of 1870 is 188,981 sq.m., but that amount is probably too large by 25,000 sq.m. Near the coast below 34° are the islands of San Miguel, Santa Rosa, Santa Cruz, Santa Barbara, Santa Catalina, San Nicolas, and San Clementes, but none of them are important, and but one or two are under cultivation.

The principal harbors on the Pacific are San Francisco, San Diego, Humboldt, Santa Barbara, Monterey, Bodega, San Luis Obispo, and Tomales. The bay of San Francisco is the finest harbor on the Pacific coast. Entering by the “Golden Gate,” a strait only a m. wide and 5 m. long, vessels are in a land-locked bay about 9 m. wide by 50 m. length, sheltered from the ocean by land from 6 to 15 m. wide. The bay of San Pablo is a portion of that of San Francisco. San Diego, in the s., is also an important harbor. The surface of C. is generally rough. There are two mountain chains running through; the Coast range, and the Sierra Nevada, or snowy mountains, the latter forming in some parts the eastern boundary of the state. Both ranges are united at the n. and s. end. The Coast mountains are comparatively low, seldom showing peaks as high as 5000 feet. The range is near the ocean, and there are but few available harbors along the 700 m. of coast. The bay of San Francisco pierces this range, which is further divided by valleys such as the Napa, Sonoma, Los Angeles, and Salinas. In breadth the Coast range is from 20 to 40 miles. The plains and valleys are fertile, and generally have a delightful climate. A lesser chain, the Mount Diablo range, is about 150 m. in length by about 25 wide. One of the prominent natural features near San Francisco is the Contra Costa range of hills, running from Carquines bay about 50 m. in a s.e. direction. Some of the higher of the Coast mountains are: Mts. Diablo, 3881 ft.; Ripley, 7500 ft.; Downie, 5675 ft.; and San Carlos, 4977 ft. All these mountains are heavily clothed in verdure, and nearly all contain minerals of value. In the n. part of the state numerous branches of the Coast range and the Sierras intermingle, rendering that portion extremely rugged. The Sierra Nevada range, starting from Mt. San Bernardino, about 34° n., runs n.w. and n., and reaches the Coast range again at 41° 15' by a western spur. The summits of the Sierra mountains are in many instances above the snow line, and there are but few available passes. The range is about 450 m. long, and from 50 to 80 m. wide. The mountains are thickly wooded as far as trees will grow, and above the green pines shoot up bare and snow-covered granite peaks. Some of the altitudes are: Shasta, 14,442 ft.; Tyndall, 14,386 ft.; Brewer, 13,886 ft.; Dana, 13,277 ft.; Castle, 13,000 ft.; Lassen.

10,577 ft. The Johnson "pass" over this range is 6752 ft., and that of the Central Pacific is 7042 ft. above tide. Mt. Diablo, about 28 m. n.e. from San Francisco, is a lone and very conspicuous peak, affording from its summit a comprehensive and picturesque view; and the same is true of Mt. Helena, at the head of Napa valley, 60 m. n. from San Francisco.

The region between these great mountain ranges seems to have been once the bottom of a lake. It is now called the Sacramento and the San Joaquin valleys, and includes about 25,000 sq. m., reaching 400 m. n. and s., and having a width of more than 50 miles. The Sacramento and San Joaquin rivers drain this valley—the former the northern and the latter the southern portion. Near the central part of the region these rivers unite, and find an outlet through the coast mountains to the ocean. In the extreme s. small lakes and marshes cover a considerable extent. The land in this vast central basin is remarkably fertile, and level near the large streams, but rolling and hilly towards the mountains. There is a plateau or table-land in the n. at about 41°, which is more than 100 m. long and about 5000 ft. above tide. This high plain forms a basin by itself, having no outlet for water. In the s. part of C. is another basin known as the Colorado desert. It is about 150 by 70 m., and is mostly a barren waste of sand.

The largest river is the Colorado, which forms the boundary along Arizona, and is navigable beyond the C. line. The Sacramento is navigable as far as the city of Sacramento, and the San Joaquin is available for light-draft boats nearly to the sierras. Mountain lakes are a feature of California. Lake Tahoe, on the summit of the sierras, 6200 ft. above tide, is about 20 m. long and 1500 ft. deep, and its water is exceedingly pure. The overflow passes into Truckee river, and disappears by evaporation. Other lakes are Clear, Owen's, and Mono, the latter 14 by 9 m., and 7000 ft. above the sea. In Lassen and Modoc cos. are several large alkaline lakes.

The wonderful scenery of the Yosemite valley is known the world over. This valley is in the sierras, about 150 m. a little e. of s. from San Francisco. The valley is nearly 4000 ft. above tide, and is hemmed in by almost perpendicular cliffs from 2000 to more than 3000 ft. high. The cascades in and around the valley are of great beauty and variety. Yosemite creek falls 2600 ft. in three leaps, the highest being 1500 feet. The Merced and Nevada falls combine nearly as great heights with larger bodies of water, and are surprisingly grand. A commanding object in the valley is the Half Dome, a rocky mass rising about 4750 ft. above the level, and presenting a vertical face of 1500 feet. Parallel with the Merced river, which flows directly through the valley, and a little farther n., is the Tuolumne, noted for the number and beauty of its cascades, and the picturesque scenery along its course. This river falls 4650 ft. in the course of 22 miles. Mt. Dana, over 13,000 ft. high, dominates the region above the Yosemite, and from its easily accessible summit opens a magnificent panorama of the Sierra Nevada. Mono lake is 7000 ft. below; beyond are the lofty and in some instances snow-clad peaks of the great basin, while volcanic cones are visible to the s. of the lake.

"The big trees" are another peculiar and remarkable feature of California. There are several groups or patches of these forest giants, the most important being about 30 m. n.n.e. of Visalia. They are called *sequoia gigantea*, or giant red-wood, and vary from the height of a large pine to nearly 400 ft., with circumferences at a man's height from the ground varying from 25 to more than 100 feet. One is still standing that is reported to be 376 ft. high and 104 ft. around; and remains of fallen trees show that there have been specimens considerably larger. One was cut down which was more than 24 ft. in diameter without, and about 27 ft. with, the bark, or a circumference of nearly 85 ft.; its age was nearly 1300 years. Other C. timbers are pines in large variety, black oak, ash, hickory, elm, beech, white cedar, spruce, fir, laurel, tamarack, cypress, yew, juniper, chestnut, acacia, poplar, cottonwood, walnut, maple, buckeye, etc. Of shrubs the more remarkable are the thorny manzanita and the chamiso, which form the impenetrable undergrowth known as "chaparral."

The fauna of C. is varied and extensive, and may be headed by the grizzly bear (now almost extinct). There are black, brown, and cinnamon bears; sea-lions, whose noises and gambols around Seal Rock in San Francisco bay attract thousands of sight-seers; beaver (rapidly disappearing); ground squirrels (great plagues to farmers for their burrows in the soil); gophers (a similar nuisance); mountain squirrels; elk (once abundant but nearly extinct); deer; antelope (rapidly thinning out); mountain sheep (also nearly gone); raccoons, skunks, badgers, martens, minks, weasels, wolves, muskrats, porcupines, otters, wild cats, coyotes, foxes, rabbits, etc. Birds are abundant; those peculiar to the region are the road-runner, nearly allied to the cuckoo, but like a pheasant in habit of running and inaptitude to fly; the C. woodpecker, which bores holes in the bark of trees and fills the cavities with acorns, the object apparently being to collect food in which grubs will fatten and in due time gratify the palate of the bird. The C. vulture is the largest flying bird in North America; the sage hen is a valuable bird, and plentiful; there are two species of quail, besides eagles, hawks, owls, buzzards, crows, magpies, ravens, jays, swallows, humming-birds, robins, larks, orioles, pigeons, doves, cranes, bitterns, herons, coots, snipe, rails, sandpipers, curlews, ducks, teal, geese, the pelican, albatross, cormorant, loon, gull, petrel, etc. The rattlesnake is the only dangerous reptile, but there are many other serpents, with tortoises, frogs, toads, lizards, and salamanders. Fish are abundant, and include salmon, eels, mackerel,

blackfish, perch, redfish, flounders, herring, shad, sturgeon, sharks, and sunfish. Oysters, clams, scallops, etc., with lobsters, crabs, and shrimps, are abundant.

Nearly all the gold mines are on the western slope of the Sierra Nevadas, in a belt of country about 220 by 40 m., or nearly 9000 sq.m., extending n. to Oregon. The richest section is in the middle of this auriferous belt. The gold is in a metallic condition, and mixed with silver and other metals. In the stream and alluvial deposits the metal is in fine scales, with occasional lumps; in rock it is in veins or quartz lodes. The gold in the soil is gotten out by washing, and the process is called "placer mining," from "placer," i.e., "place of deposit." Rock mining is more expensive, and requires heavy and costly machinery for crushing or grinding the quartz, from which the metal is extracted by amalgamation with quicksilver. From a single quartz mill in 1851, the number rose to 421 in 1870. Mercury is found in C. in the form of sulphuret, or cinnabar, which is plentiful in the coast range in the s. part of the state, particularly at New Almaden. In separating gold by amalgamation, the crushed ore is put with the mercury into a revolving drum, and whirled around for a time. When the drum is opened there is found a fluid mass, which is the mercury, appearing half congealed, and containing all the gold. The mixture is poured into a retort and heat is applied, when the mercury distills over, leaving the gold in the retort. The mercury is then ready for future use. Silver has been found in many places in C., but not much attention has been given to it. There are silver and copper ores in combination in the s.e. part of the state, and very superior magnetic iron ores in the coast range and other parts. Copper and manganese have also been found, and the valuable platinum is plentiful in the valley of the Klamath. Tin, lead, zinc, plumbago, and antimony are found, and there are asphaltum and petroleum in some places. There are hot springs impregnated with alum; and buhrstone, alabaster, granite, and marble, some of the latter finely variegated. Gypsum, bismuth, brick and porcelain clay, and hydraulic limestone are found. There is bituminous coal in Mt. Diablo and the neighboring hills, and salt in several places. Very rich deposits of sulphur have been worked in one locality. One of C.'s mineral novelties is biborate of soda, or borax, found in Clear lake, the water of which is impregnated with the mineral, the borax being crystallized in the mud that forms the bottom of the lake; and near another borax lake there are a number of boiling springs, the water of which is impregnated with soda, chlorine, and boracic acid.

The state possesses some valuable advantages of climate, the leading feature being the remarkable uniformity of temperature. Comparing San Francisco with Washington, we find the mean of the year to be about the same; but the summer mean is 60° in San Francisco and 76.3° in Washington, while the winter mean is 51° in San Francisco and 36.05° in Washington. On the Pacific coast the isothermal lines run much farther n. than on the Atlantic. The line that passes through New York touches the Pacific near Vancouver island; that of Halifax, N. S., reaches n. of Sitka, in Alaska; and if we go s. down the sea-coast we find San Diego 6 or 7 degrees cooler than Charleston and Vicksburg, which are in nearly the same latitude. There are but two seasons in C., the dry, and the rainy; the winds are remarkably uniform, and in the hot months there is invariably a strong cool breeze from the ocean. Some of the valleys shut from the wind endure very high temperature, often as much as 120° in the shade; but even there at night the radiation is so intense that bed-blankets are needed. In the s.e., C. is intolerably hot; at fort Yuma the range is often above 90° day and night for weeks together; but this is an exceptional place.

The volcanic character of C. is manifested by the mountain formations, and, as in all such regions, there are occasional earthquakes. There was one in Mar., 1872, of great violence, giving one tremendous and many lesser shocks, upheaving and cracking the ground, and causing the destruction of 30 lives and a vast amount of property. In 1861, there were heavy floods in the same parts of the state, whereby property to the value of millions of dollars was destroyed. To these calamities fire added enormously, especially in San Francisco.

Agriculture in C. is dependent upon the amount of rain. If there is plenty, excellent crops are the result; if rain fails, the crops are inferior or worthless. Only a small portion of C.'s 120,000,000 acres are available for farming, and the census of 1870 returned only 6,200,000 so used. Sowing is done in Nov., and June and July are harvest months. Machinery is largely employed in agriculture. Fruits are important and abundant. Grapes and wines from C. are always in the eastern markets. As early as 1861, a million gallons of wine were made in C. (see AMERICAN WINES). Apples, pears, plums, apricots, oranges, lemons, figs, pomegranates, olives, and almonds are raised. Cotton and the sugar-beet grow well. Wool-growing is a large industry, the hilly parts of the state being well adapted to the raising of sheep, which need neither fodder nor shelter, even in winter.

C. is not remarkable for manufacturing industries, though they are increasing. Flour and grist mills and lumber-mills are in great number. Boots and shoes, cigars, wagons, woolen goods, gunpowder, tanneries, chemicals, and iron may be mentioned. The branch mint in San Francisco turns out a large coinage.

The heterogeneousness of the population of C. is noticeable. The gold excitement brought people from the ends of the earth, and every slumbering clime awoke and sent onward her legions. Of 560,247 inhabitants in 1870, 209,848 were born in the following

countries: Africa, 48; Asia (not including China and Japan), 56; Atlantic islands, 943; Australia, 1593; Austria, 1078; Belgium, 291; Bohemia, 90; British America, 10,670; Central America, 126; China, 48,826; Cuba, 45; Denmark, 1837; France, 8068; Germany, 29,701; England, 17,699; Ireland, 54,421; Scotland, 4949; Wales, 1517 (total of British subjects, 90,926); Greece, 97; Greenland, 1; Holland, 472; Italy, 4660; Japan, 33; Luxembourg, 11; Mexico (the native Californians were naturalized by the treaty), 9339; Norway, 1000; Pacific islands, 93; Poland, 804; Portugal, 2508; Russia, 540; Sandwich islands, 278; South America, 1956; Spain, 405; Sweden, 1944; Switzerland, 2927; Turkey, 17; West Indies (except Cuba), 350; at sea, 142. Every one of the United States and territories was represented. The largest numbers were from New York, 33,766; Illinois, 10,695; Maine, 11,261; Massachusetts, 15,334; Missouri, 16,050; Pennsylvania, 11,201; others ranging from 10,000 down to 7 for Dakota, while 23 came from Alaska. The natives of C. were 163,653, not quite 30 per cent of all natives. Of the entire population only 26,909 were natives of the United States born of native parents, or less than 5 per cent. Males largely exceeded females, being 349,479 to 210,768. The Chinese are the cause of much annoyance to many of the people, who urge against them that they unduly cheapen labor, and that they bring demoralization; and strong efforts have been made, both by legislation and by popular violence or threat, to keep them out, but hitherto without effect. The problem is complex and difficult; and its solution cannot be said to have been yet reached. In 1870, there were 11,703 Chinese in San Francisco, about 8 per cent of the total population.

The chief cities and towns in the order of population, in 1870, are San Francisco, Sacramento (the state capital), Oakland (across the bay from San Francisco), Stockton, San Jose, Los Angeles, Maryville, Santa Cruz, San Diego.

C. is well supplied with serial literature. At the beginning of 1879 there were 41 daily newspapers, 1 tri-weekly, 9 semi-weekly, 209 weekly, 1 semi-monthly, 19 monthly, 1 bi-monthly, and 2 quarterly publications. The state has made ample provision for education. School age is from 5 to 21; persons within the age, 205,475; enrolled, 154,079; average attendance, 94,696; school-days in the year, 144; teachers of common schools, 3293; school fund, \$2,011,800; income, \$3,820,661; expenses, \$3,155,815; value of school property, \$6,343,369. There is a state normal school at San Jose, having, at last report, 90 students. In 1879, there were 13 colleges, viz.: Sacred Heart, St. Ignatius, and St. Mary's, all in San Francisco, and Our Lady of Guadalupe, at Santa Inez (all Roman Catholic); C. college, at Vacaville (Baptist); Hesperian, at Woodlawn, and Pierce Christian, at College City (both "Christian"); Pacific Methodist, at Santa Rosa (Methodist Episcopal, South); university of the Pacific, at Santa Clara (Methodist); St. Augustine, at Benicia (Protestant Episcopal); the university of C., at Berkeley, and the university, at Washington (both non-sectarian). The Pacific theological seminary (Congregational) and the San Francisco theological seminary (Presbyterian) are at Oakland. Medical education is provided for by the C. college of pharmacy, a medical department of the university of C., and the medical college of the Pacific, all in San Francisco. The university has also a law department. In the 13 colleges there were 199 instructors and 3187 students; in the theological seminaries, 7 instructors and 15 students of collegiate grade; in medicine, 26 instructors and 90 students; and in law, 3 instructors and 103 students. A special course of three years is provided for young women by the Pacific (Methodist) college, and women are admitted to all, except the Roman Catholic colleges.

The railroads in California at the beginning of 1879, and the number of miles within the state, were: Southern Pacific, from San Francisco to Colorado river (to unite with the projected Texas Pacific from the Mississippi river), 712 m.; Central Pacific, from San Francisco to Ogden, Utah, 615 m.; Northern, from Oakland to Suisun, 113½ m.; California Pacific, from San Vallejo to Sacramento, 113 m.; San Francisco and N. Pacific, from San Rafael to Cloverdale, 94 m.; N. Pacific Coast, from Sancelito to Moscow mills, 79½ m.; Sacramento and Placerville, from Sacramento to Shingle springs, 49½ m.; San Pablo and Tulare, from Tracy to Martinez, 47 m.; Stockton and Copperopolis, from Stockton to Oakdale, 44½ m.; Vaca Valley and Clear Lake, from Elmira to Madison, 30 m.; S. Pacific Coast, from Dumbarton to Los Galos, 29½ m.; Los Angeles and San Diego, from Florence to San Diego, 27 m.; Amador Branch, from Galt to Lone, 27 m.; California Northern, from Marysville to Oroville, 26½ m.; Nevada County, from Nevada City to Colfax, 22½ m.; Santa Cruz, from Santa Cruz to Vajaro depot, 21½ m., and nine other roads, from 17 to 3½ m. in length; there being 2046 m. of railroad in the state.

The organic law of C. is very similar to that of New York and other old states. The constitution, which was adopted Nov. 13, 1849, put the then residents on the same standing as native-born citizens with regard to property. Public debts exceeding \$300,000 at one time cannot be incurred unless approved by popular vote. Voters are white male citizens, 21 years old, resident six months in the state, and 30 days in the voting district. (The 15th amendment to the federal constitution makes colored citizens also voters, but the Chinese are not permitted to vote.) Elections are biennial, on the first Tuesday in September; but judges and the superintendent of public instruction are voted for at special elections in October. A plurality is sufficient to elect. The assembly has 80, and the senate 40 members, who are paid \$10 per day for sessions limited to 120

days, and \$3 for every 20 m. of travel. The legislature meets biennially at Sacramento. The chief executive officers and annual salaries are: Governor, \$7000; lieutenant-governor, \$12 per day during the session of the legislature, and \$10 per day as warden of the state prison; secretary of state, \$4000; treasurer, \$4000; controller, \$4000; superintendent of public instruction, \$3000; adjutant-general, \$4000; and surveyor-general, \$3000. A chief justice and four associate justices of the supreme court are chosen for terms of ten years, having salaries of \$6000. The governor's veto may be overcome by a two-thirds vote in the legislature. There are county courts, each with a single judge, who also acts as surrogate, except in San Francisco. The wife is secured in both real and personal property had before or acquired after marriage. The earnings of both wife and husband are common property, but the wife's earnings are not liable for the husband's debts. If a wife be separated from her husband, her earnings and those of her minor children are her own; she may sue and be sued alone, and, by leave of a court, convey alone; and a married woman can dispose of her separate estate by will. Homesteads to the value of \$5000 for the head of a family, and \$1000 for a single person, are exempt from levy. Insolvent debtors, resident and non-resident, can be discharged from debts upon making assignment of all their property, and publishing notice thereof. The more important penalties are: For treason, and murder in the first degree, death; murder in the second degree, and robbery from the person, 10 years to life imprisonment; manslaughter, 10 years or less; killing in a duel, 7 years or less; mayhem, 14 years or less; rape, from 5 years to life; forgery and perjury, 14 years or less. Chinese and Indians cannot testify in court against white persons, and special taxes are imposed to restrict immigration from China (but this is believed to be illegal under our treaties with China). Any rate of interest agreed upon is lawful. Open accounts are outlawed in two years; notes in four, and judgments in five, years.

This constitution was in force until 1879. In that year (Mar. 3) a state convention, which had been in session 157 days, reported a new constitution, in which there were many novel propositions and radical changes from the old organic law. The new constitution was vigorously opposed, but in the vote taken May 7 there were 77,959 in favor and 67,134 opposed, showing an affirmative majority of 10,825. The main provisions of the new constitution are the following: Trial by jury may be waived, by consent of parties, in criminal cases not amounting to felony; and in civil cases as may be prescribed by law. In civil actions and misdemeanors juries may consist of 12, or less, as parties may agree; and three fourths of a jury may decide a verdict in civil actions. No native of China, no idiot, insane person, or person convicted of infamous crime, and no person hereafter convicted of embezzlement or misappropriation of public money, may vote. After 1880, legislative sessions begin on the first Monday after Jan. 1, and are biennial. Senators (40) hold 4 years, assemblymen (80) 2 years; legislative elections are held on the Tuesday following the first Monday in Nov. Pay of members continues only 60 days; no bill can be presented after 50 days of the session have gone by except on consent of two thirds. In appropriation bills the governor may veto or approve special items. Persons holding United States offices, except post-masters who have less than \$500 salary, cannot hold offices of honor or profit in the state. No one convicted of embezzlement or defalcation of public money of the union or of any state, county, or town, is eligible for office in California. No money shall ever be taken from the state treasury for the benefit of any institution not under the state's entire control; but the legislature may grant aid to orphans, abandoned children, and aged poor. Laws shall be passed to prohibit lotteries, gift enterprises, and anything in the nature of a lottery; also, to regulate or prohibit speculative sales of stock; and all contracts for future delivery of stock are void. In elections by the legislature the members shall vote *viva voce* . Every description of direct or indirect appropriation or gift of property for the benefit of any sect is forbidden, not only to the legislature, but to the counties, cities, towns, school districts, and corporations. The public credit shall not be given or loaned in aid of any person, association, or corporation; nor shall the state or any political division thereof subscribe for stock or become an owner in any corporation. Extra compensation to public officers, agents, contractors, etc., is positively forbidden. Laws shall be enacted regulating charges for gas, telegraphing, and storage and wharfage. Bribery of a member of the legislature and lobbying with that purpose are declared felony; members proved guilty of receiving bribes are disfranchised and can never hold offices of honor or trust. Witnesses in examinations for bribery shall be compelled to testify. The governor's term is four years, salary \$6000; other state officers \$3000. The legislature may reduce but cannot increase these sums. Fees are abolished so far as these officers are concerned. A governor is ineligible for U. S. senator during his term of office. Among the judiciary provisions it is provided that after July 1, 1880, no judge of superior or supreme court shall receive salary unless he swear that no cause in his court submitted ninety days previous remains undecided. Appropriations to sectarian schools are prohibited. Counties, towns, and cities can incur debt only by the consent of two thirds of the voters at special elections. Cities and towns have power to regulate the price of water and artificial light. A stockholder in a corporation is liable to the amount of his shares for debts incurred while he is an owner. Directors and trustees are liable to stockholders and creditors for money embezzled or misappropriated. The acceptance of passes from railroads or other

transportation companies by members of the legislature, or by public officers except railroad commissioners, works a forfeiture of office. Lands and improvements thereon shall be separately assessed. Cultivated and uncultivated lands of the same kind and situation shall be assessed at equal values. Tax-payers shall make return under oath of their real and personal property, and provision may be made for payment of real estate taxes by installments. Income taxes may be assessed and collected. There is a poll tax of \$2 on each male inhabitant over 21 and under 60 for the benefit of the school fund. Except in case of war, invasion, or insurrection, the legislature shall not create a debt of over \$300,000 unless for some specific object, and then provision for payment within 20 years shall be made; and such special debts shall be voted upon by the people.

The famous Chinese provisions are as follows: *Sec. 1.* The legislature shall prescribe all necessary regulations for the protection of the state, and the counties, cities, and towns thereof, from the burdens and evils arising from the presence of aliens who are or may become vagrants, paupers, mendicants, criminals, or invalids afflicted with contagious or infectious diseases, and from aliens otherwise dangerous or detrimental to the well being or peace of the state; and shall impose conditions upon which such persons may reside in the state, and provide the means and mode of their removal from the state upon failure or refusal to comply with such conditions; provided, that nothing contained in this section shall be construed to impair or limit the power of the legislature to pass such police laws or other regulations as it may deem necessary.

Sec. 2. No corporation now existing or hereafter formed under the laws of this state shall, after the adoption of this constitution, employ, directly or indirectly, in any capacity, any Chinese or Mongolian. The legislature shall pass such laws as may be necessary to enforce this regulation.

Sec. 3. No Chinese shall be employed on any state, county, municipal, or other public work, except in punishment for crime.

Sec. 4. The presence of foreigners ineligible to become citizens of the United States is declared to be dangerous to the well being of the state, and the legislature shall discourage their immigration by all the means within its power. Asiatic coolyism is a form of human slavery, and is forever prohibited in this state, and all contracts for cooly labor shall be void. All companies or corporations, whether formed in this country or any foreign country, for the importation of such labor, shall be subject to such penalties as the legislature may prescribe. The legislature shall delegate all necessary power to the incorporated cities and towns of this state, for the removal of Chinese without the limits of such cities and towns, or for their location within prescribed portions of those limits; also, it shall provide necessary legislation to prohibit the introduction into this state of Chinese after the adoption of this constitution.

Principals and seconds in duelling or challenging to a duel are disfranchised, and cannot again hold office. The property of husband and wife shall belong separately to each. The suffrage shall be protected by adequate laws. Mechanics and laborers have property liens for the value of labor and material furnished. Eight hours is a day's work. No person shall, on account of sex, be disqualified from entering upon or pursuing any lawful business, vocation, or profession. There are no more judicial districts; every county elects a superior judge (San Francisco elects 12, six others elect two each). Three railroad districts were created, and the congressional districts were newly arranged.

At the time the vote was taken on this constitution, for and against which 145,212 votes were cast, there were 154,638 votes against Chinese immigration. But all the enactments on that subject fall to the ground, since they are in conflict with the treaty with China, and the federal constitution provides that treaties shall be the supreme law of the land.

The first votes of California (4) for president were cast in 1852 for Pierce and King; in 1856, for Buchanan and Breckinridge; in 1860, for Lincoln and Hamlin; in 1864 (5 votes), Lincoln and Johnson; in 1868, Grant and Colfax; in 1872 (6 votes), Grant and Wilson; in 1876, Hayes and Wheeler. Of high federal officers, the state has furnished one supreme court justice. (For latest statistics, see APPENDIX.)

CALIFORNIA UNIVERSITY OF, established in 1868 as a non-sectarian institution, an outgrowth of the college of California. The university is at Berkeley, 4 m. n. of Oakland, and occupies two buildings. In 1879, it had 38 professors and instructors, and 332 students of college grade, under the presidency of John Le Conte. The students are enrolled in separate colleges, in each of which they may pursue a regular or a special course. The college of letters maintains two courses: the regular classical, which leads to the degree of bachelor of arts, and the literary course, which leads to the degree of bachelor of philosophy. In both courses a liberal amount of time is bestowed upon the principles of modern science. All the colleges are in successful operation, including the college of letters, five colleges of science, and three professional colleges of law, medicine, and pharmacy, under regular faculties. Students of both sexes are admitted on equal terms. The university is entitled to the avails of the public lands given to the state for an agricultural college by the act of congress of 1862. Tuition is free in the university proper, but not in the preparatory department.

CALIPPUS, or CALLIPPUS, an astronomer of Greece, in the 4th c., B.C. He corrected earlier measurements of time by Meton's cycle of 19 years, which he found to be six hours too long. He made the year 365 $\frac{1}{4}$ days.

CALISTHENICS, physical exercise designed to promote strength and proper bodily development. The usual apparatus includes a pair of light dumb-bells, Indian clubs, stout wooden rings, a wooden staff about 4 ft. long, horizontal bars, bags of beans for throwing and catching, and two weights running upon vertical cords. The practice of calisthenics is growing among schools for girls.

CALIXTUS, a name borne by three popes. The first was born a slave, and is said to have suffered martyrdom, 223 A.D. The second (d. 1124) was a son of the count of Burgundy, and a ruler of firmness. He expelled the anti-pope Gregory from Rome in 1120, stormed the castle in which he took refuge, and made him a prisoner. He also concluded the concordat with Henry V., of Germany, at Worms; broke the power of the Cenci family, and demolished their castles. The third was of the Spanish Borgia family, and his leading idea was to institute a great crusade against the Turks, in which he failed. He died in 1458, and was succeeded by Alexander VI., one of the most notorious of the Borgia family.

CALLAHAN, a co. in n.w. Texas, not settled; 900 sq. miles. It has a rocky and broken surface, with little timber, but good for grazing.

CALLAWAY, a co. in s.w. Kentucky, on Tennessee river; 450 sq.m.; pop. '70, 9410—812 colored; in '80, 13,333. The surface is varied, and soil fertile, producing corn, tobacco, etc. Co seat, Murray.

CALLAWAY, a co. in e. Missouri, on the Missouri river; 743 sq.m.; pop. '70, 19,202—3434 colored. The soil is mainly prairie, and fertile, producing corn, tobacco, potatoes, butter, wool, etc. Co. seat, Fulton.

CALLEJA, Don FELIX DEL REY, 1750—1820; count of Calderon, commanding the Spanish forces in Mexico during the Hidalgo insurrection. In Jan., 1812, he captured the fortress of Zitacuaro and murdered all the inhabitants; and in the same year he captured Hidalgo's successor, the priest Morelos, who was at once shot. For these acts he was made viceroy and ennobled.

CALLICRATES, a Greek architect in the 5th c. B.C., who, assisted by Ictinus, was the builder of the Parthenon.

CALLICRATIDAS, the successor of Lysander in command of the Lacedemonian fleet against the Athenians, 406 B.C. After two successful battles he was defeated in a third, thrown overboard, and drowned.

CALLIERES BONNEVUE, LOUIS HECTOR, Chevalier de, 1639—1703; a French army officer, governor of Montreal in 1684, and in 1687 leader of the advance of the forces invading the lands of the six nations in New York. He visited France to urge the seizure of the city of New York as a security for French supremacy in Canada. In 1669, he was made governor-general of Canada.

CALLIMACHUS, an architect and artist of Greece, who lived about 400 B.C., and is said to have been the originator of the Corinthian column.

CALLINUS or ERNESTUS, reputed to have been the earliest of the Greek poets, lived about 700 B.C. One of his elegies has been preserved to the present time.

CALLIRHOË, a fountain near Athens, called the fountain of nine springs, because its waters were distributed in that number of channels.

CALLISTEIA, a Grecian festival at which a prize was awarded to the most beautiful woman. But among the Elians men were the competitors, and the victor received a suit of armor which he dedicated to Minerva.

CALLISTRATUS, an orator of Athens whose eloquence led Demosthenes to devote himself to public speaking. For surrendering Oropus (after a heroic defense) to the Thebans, he was condemned to death, 361 B.C., but he fled to Macedonia, where he founded the city of Datum, afterwards called Philippi. At a later period he returned to Athens and was put to death.

CALMAR. See KALMAR, *ante*.

CALORIMOTOR, a powerful galvanic battery devised by Dr. Hare. He placed a sheet of non-conducting substance, as paste-board, between a sheet of copper and another of zinc, rolled the whole together, and plunged the bundle into a barrel of acidulated water. As there was but one pair of plates, the intensity of the electricity produced was feeble, but because of the great surface, the quantity was large; effects which depend upon quantity, as heat, were produced in an intense degree. The same result is now attained by coupling the elements of many small cells in such a way that all the positive plates shall be united in one, and the negative plates in another.

CALOVIUS, ABRAHAM, 1612—86; a Lutheran minister, rector at Dantzic, and professor at Königsberg and Wittenberg. He was a strong controvertist, and a vigorous supporter of his sect.

CALPE. See HERCULES, PILLARS OF, *ante*.

CALPURNIUS, TITUS JULIUS, surnamed **SICULUS**, a pastoral poet who lived in Sicily about the end of the 3d century. He seems to have been an imitator of Virgil, but beyond his complaining of poverty nothing is known of his personal history.

CALTANISSETTA, a province in Sicily s. of Palermo; 1455 sq.m.; pop. '71, 230,066. The soil is fertile, producing grapes, olives, almonds, hemp, cotton, etc. Marble, agate, alabaster, sulphur, and iron ore are found. Agriculture is the chief industry, but there are foundries and manufactories of chemicals.

CALUMET, a co. in e. Wisconsin, on Winnebago lake; 360 sq.m.; pop. '70, 12,335. It is a hilly region, but with abundance of timber and good pasturage, and produces grain, hay, hops, wool, etc. Co. seat, Chilton.

CALUMET, a t. and village in Houghton co., Mich., on the Mineral Range railroad; pop. of township '80, 8291. In the town is a copper-mine supposed to be the richest in the world; employing from 1800 to 2000 men and yielding annually 12,000 to 15,000 tons of pure copper. There are some manufactures in the village.

CALVERT, a co. in Maryland, on Chesapeake bay; 250 sq.m.; pop. '70, 9865—5533 colored. Its surface is rolling, with good soil, having marl in abundance. The chief productions are tobacco, corn, and oats. Co. seat, Prince Frederick.

CALVERT, GEORGE AND CECIL. See **BALTIMORE, LORD.**

CALVERT, GEORGE HENRY, b. Baltimore, 1803; a graduate of Harvard, and for a long time editor of the *Baltimore American*. In 1832, he published *Illustrations of Phrenology*, the first treatise on the subject issued in this country. Among his works are a *Metrical Version of Schiller's Don Carlos*; *Scenes and Thoughts in Europe*; *Cabiro*, a Don Juanic poem; *An Introduction to the Social Sciences*; *The Gentleman*; *Aynta and Other Poems*; *First Year in Europe*; *Ellen, a Poem*; and *Goethe, his Life and Works*. In 1843, he removed to Newport, R. I., of which city he was chosen mayor in 1853.

CALVERT, LEONARD, 1582-1647; brother of the second lord Baltimore, and first governor of Maryland. In 1663, he led the first expedition to Maryland in two small vessels, and on the 25th of Mar., 1634, at St. Clement's island on the Potomac, a regular mass was celebrated. Immediately afterwards they settled on the right bank of a river called by them St. George, and founded the prospective city of St. Mary, no signs of which now remain. After much difficulty with the people of Virginia the colonists under Calvert were fully established, and in 1647 his name as governor of the province was recognized.

CALVINISTIC METHODISTS, in Great Britain, are in three divisions: the Whitfield Connection, 1741; Lady Huntingdon Connection, 1748; and Welsh Methodists, 1750.

CALVISIUS, SETHIUS, 1556-1617; an astronomer and chronologist of Germany, who organized a system of chronology embodying the history of the world. The work was commended by Scaliger and Casaubon, but was condemned in the *Index Expurgatorius*. In 1612, he published a work on the Gregorian calendar, undertaking to show the inadequacy of that system and to supplant it with one founded upon astronomical principles.

CALYDON, an ancient city of Ætolia, $7\frac{1}{2}$ m. from the sea on the river Evenus, said to have been founded by Calydon, son of Ætolus, to have been the scene of the hunting of the Calydonian boar by Meleager and other heroes, and to have sent soldiers to the Trojan war. In 391 B.C., it was in possession of the Achæans, and so late as the time of Pompey, it was a place of importance. In 31 B.C., Augustus removed the inhabitants to Nicopolis, a city then founded to commemorate the victory of Actium.

CALYPSO BOREALIS, an orchid with heart-shaped leaf, and beautiful yellow, pink, and purple flowers; growing in the bogs and moist woodlands of the United States and Canada.

CAM, in machinery, a curved plate or groove, by which motion is communicated and controlled. The moving plate or groove is a *driver*; the rod, bar, or other thing moved, is called the *follower*. The follower is held against the driver by its weight or by a spring, or other device. The radii of the driver determine by their length the motion of the follower, and the angles which they make with some one, chosen as a base of calculation, fix the time at which change of motion occurs. For example, it may be desired that the follower shall move upward, and then downward, with a uniform velocity. From the center of the driver any convenient number of radii may be drawn, dividing equally the 360° of angular space. On one of these radii we mark the distance from the center of the driver at which the point of the follower will stand when in its position nearest to that center. Upon the opposite radius, distant 180° from the first, the point is marked which gives the farthest position of the follower; the difference between these radii being divided into as many equal parts as we have made angular spaces in the 180°, we increase the length of each radius in succession, beginning with the shortest, by one of those parts, and we draw a curve connecting the ends of the radii so terminated. Of course the greater the number of parts chosen for the division of the angular space and of the difference of the first and last radii, the more accurately will the curve be drawn. The edge of the driving-plate being cut to this curve, the follower being made to press constantly against it, and the driver being turned with a uniform rotation, the follower will move through its limited space with an equable

motion, because the radii of the driver increase by constant amounts, at constant intervals of time. If the curve is reversed, the second part being the symmetrical opposite of the first part, the follower will descend as uniformly as it rose. The cam thus drawn is one of frequent use, and is called the *heart-shaped cam*. To avoid friction the end of the follower often carries a roller which works against the surface of the cam; in this case the cam-surface is found by drawing a line parallel to that above described, at a constant distance equal to the radius of the roller. If we wish the follower to rest at any part of a cycle of motion, the radii for that time will be made equal, and the corresponding cam-surface will be a circular arc; the time will be such a part of that of a complete cycle, as the angle between the radii of the ends of this arc, is of 360°. The cam-plate has sometimes a groove cut upon its flat side, and the end of the follower runs in the groove. A spiral groove may be cut into the surface of a cylinder as in a screw; if a follower be inserted in this groove it will be driven forward as the cylinder turns; when the groove reaches the end of the cylinder, it may turn back, and cause the follower to return with the same motion, or if the pitch of the groove be made shorter or longer, the return of the follower will be changed accordingly. By a judicious construction and arrangement of cams, almost every variety of motion may be produced with the greatest precision as to time and amount. A cam-form which does not make a complete revolution, but after moving a short distance in one direction oscillates in the opposite direction, is called a *wiper*. A familiar example may be seen in the engine-room of a steamboat, in the rocking arms which raise and let fall the valve rods.

CAM, Diogo, a Portuguese navigator of the 15th c., who continued the w. African discoveries commenced by Don Henry. He had sufficient influence with the king of Congo to induce that monarch to permit the establishment of Christianity in his dominion.

CAMARINA, an ancient city of Sicily, near the mouth of the Hipparus, 20 m. e. of Terranova. It was founded by Syracusans in the 6th c. B.C., but soon after was destroyed, because it had thrown off its allegiance. It was restored 495 B.C., but again depopulated, being finally established about 34 years later. In 285 B.C., most of its people were sold by the Roman consuls as slaves. It continued to exist until the 2d c., but since then has been in ruins.

CAMBA'LUC, or CAMBALU' (Mongol, *Kuan-Baligh*, "city of the Khan"), the city now known as Peking. It was captured in 1215 by Genghis Khan, and in 1264 adopted as the imperial residence by his grandson Kublai, who founded a new city near the old one of Yenking. The new city, Ta-tu, or "great capital," was a rectangle about $5\frac{1}{2}$ by $3\frac{1}{2}$ m., or more than 18 m. in circumference, surrounded by a colossal wall of mud, having an inner inclosure for the palace and gardens of the Khan. There were 11 gates, and the streets ran towards them in direct lines. It was the residence of the Mongol emperors until the fall of their power in 1333. Soon afterwards the native dynasty gave it the name of Pe-king, or "north court," by which name it was known to the early Jesuit missionaries; but now the native name in ordinary use is King Cheng or King-tu, signifying "the capital." The restoration of Cambaluc was commenced in 1409; the size was diminished, and the town made more nearly a square, and in this form now constitutes the "Tartar city" of Pe-king. The walls were finished in 1437. In 1544, the "outer city" was formed, the portion now known as "the Chinese city." The whole city under the name Cambaluc was made an archiepiscopal see by pope Clement V. in 1307.

CAMBERT, ROBERT, 1628-77; the first composer of French operas; organist of the church of St. Honore, and musical superintendent to Anne of Austria, the mother of Louis XIV. When Lulli was made musical superintendent to the king, in 1673, C. went to London, where Charles II. made him master of the band. His chief works were *Ariadne, or the Amours of Bacchus*; *Pomona*; and *The Pains and Pleasures of Love*.

CAMBON, JOSEPH, 1756-1820; a French financier. He was a member of the national convention of 1792 and of the committee of safety of the next year; and in 1794 promoted the downfall of Robespierre. He is credited with having laid the foundation of the financial system of France. In 1816 he was exiled.

CAMBRIA, a co. in s.w. Pennsylvania, drained by affluents of the Susquehanna and Alleghany rivers, and intersected by the Pennsylvania railroad; 670 sq.m.; pop. 70,365,669. It is a high and broken table-land, with abundance of coal and iron. Agriculture is the chief business. Co. seat, Ebensburg.

CAMBRIAN SYSTEM (CAMBRIAN ROCKS, *ante*), rocks belonging to the primordial division of paleozoic time, and comprising the oldest part of the lower Silurian age, appears on the American continent in Newfoundland, Nova Scotia, New Brunswick, Canada, northern New York, Vermont, eastern Massachusetts, the Appalachian mountains, many parts of the Mississippi valley, and under the secondary and younger paleozoic rocks of the Rocky mountains. They are divided by American geologists into the Acadian and Potsdam groups: the former are the oldest of American primordial rocks, and contain a mass, 2000 ft. deep, of gray and dark shales with some sandstones; the latter, also in part sandstone, has in Newfoundland a depth of 5600 ft., but in the val-

ley of the St. Lawrence diminishes to 600 and even 300 feet. The sandstone beds contain ripple marks, mud cracks, layers indicating the wind-drift, and ebb and flow structure, and animal tracks. The Acadian formation yields primordial trilobites of the genera *paradoxides conocoryphe*, *agnostus*, and some others; brachiopods of the genera *lingulella*, *discina*, *oboella*, and *orthis*; and several kinds of annelide tracks. The Potsdam rocks contain a few sponges, the earliest forms of graptolite, some brachiopods, including, besides the genera in the Acadian beds, *obolus*, *camarella*, and *orthisina*; some pteropods, (*hyolites* or *theca*); two species of *orthoceras*; annelide tracks; trilobites of the genera *conocoryphe*, *agnostus*, *dikelocephalus*, *olenellus*, *ptychaspis*, *chariocephalus*, *aglaspis*, and *illænurus*. Barrande found a remarkable uniformity in the organic remains of those parts of this system which he investigated, extending through Europe and America, and named by him the primordial zone.

CAMBRIDGE (*ante*), a city, and one of the co. seats of Middlesex co., Mass., w. of Charles river, which separates the township from the city of Boston, of which C. is practically a part, as Brooklyn is of New York. There are four principal divisions, North, East, Old Cambridge, and Cambridgeport; pop. '70, 39,634. The city spreads over a large extent of territory, and is handsomely laid out in broad avenues with abundance of shade trees, among the most interesting of which is the elm under which Washington assumed command of the revolutionary forces in 1775. The house in which Washington dwelt is now the residence of Longfellow, the poet. The modern residences are generally surrounded with handsomely cultivated grounds, orchards, and flower and fruit gardens. The main feature of C. is Harvard college (q.v.), the buildings of which are in Old C., 3 m. from Boston, occupying a plot of 14 acres handsomely laid out and shaded with ancient elms. At a little distance n.e. of the college are the museum of comparative zoology, founded by Agassiz, the botanical garden, and the observatory, noted as possessing one of the best telescopes in the country. Near the museum are the Harvard law school and the Lawrence scientific school. Another conspicuous building is Memorial hall, erected to the memory of Harvard students and graduates who fell in the war of the rebellion: this is probably not exceeded in grandeur by any college hall in the world. It presents three apartments—a memorial vestibule, the Sanders theater for great academic assemblies, and a dining-hall with accommodation for 1000 persons. The whole structure is 310 ft. long by 115 ft. wide, with a tower 200 ft. high. There is also a granite monument near the college erected by the city in honor of the fallen soldiers. C. also contains Mt. Auburn, one of the most beautiful cemeteries in the world. It occupies 125 acres of hill and valley, laid out in a charmingly picturesque manner, while the monuments show a great variety of taste and munificence. This is the oldest of the splendid burial places in the country, having been dedicated in 1831. Bridges over Charles river connect C. with Boston, Brighton, and Brookline. Horse railroads connect with all adjacent towns, and the Boston and Lowell and the Fitchburg railroads pass through East Cambridge. The streets are well drained, and lighted with gas. C. is not a business place, but rather a home for the business people of Boston. Still there are manufactories of locomotives, steam-engines, glass, carriages, marble, chemicals, brushes, biscuit, candles, soap, chairs, cabinet ware, etc. The Riverside press and the university printing-office, are noteworthy; the last named is the oldest printing establishment in the country. C. has a regular city government, vested in mayor, aldermen, and common councilmen, with the usual executive and judicial courts and functionaries. Water is supplied from two large lakes in the neighborhood, and stored in large reservoirs. Under the influence of the college the schools of the city are of a high order, and to these are added the Dana library and free lectures at the Dowse institute. There are in C. three or four newspapers and about 30 churches or congregations. The first settlement here was in 1630, and was called Newtown, and Winthrop and others intended it to be the chief town in the colony. The first minister, Rev. Mr. Hooker, was settled in 1632. In 1638, money was voted to establish a public school, which was further aided by grants from the Rev. John Harvard of Charlestown. The city charter of incorporation was granted in 1846.

CAMBRIDGE, ADOLPHUS FREDERICK, Duke of, 1774–1850; youngest son of George III., and uncle of queen Victoria. He served as an ensign in the army, and was educated afterwards at Göttingen, returning home in his 20th year. In the Netherland campaign of 1793, he was taken prisoner by the French, but was almost immediately exchanged. Thereafter most of his public duty was in Hanover as governor and viceroy, until the separation of Hanover from the British crown in 1837, when he returned to England, mixing no further in public affairs.

CAMBRIDGE, GEORGE WILLIAM FREDERICK CHARLES, Duke of, b. 1819; field-marshal and commander-in-chief of the British armies; first cousin of queen Victoria. son of Adolphus Frederick, duke of Cambridge; succeeded to his title July 8, 1850. In 1837, he was col., and in 1854, lieutenant-gen. commanding the first division sent in aid of Turkey against Russia. He led the troops at Alma and at Inkerman. In consequence of ill health he returned to England, and in 1856 succeeded viscount Hardinge as commander-in-chief; in 1862, he was given the rank of field-marshal. The duke has never married, but for many years has lived with Miss Fairbanks, once known as a beautiful actress, by whom he has several children.

CAMBRIDGE PLATFORM, the system of church discipline agreed upon by the representatives of the New England churches at the synod held in Cambridge in 1648. In regard to doctrine they adhered substantially to the Westminster confession, though they did not impose that on the churches; but they did not accept that confession which was Presbyterian with respect to church order and polity, for regulating which they constructed the Cambridge platform, which declares that the form of church government is one and immutable, and prescribed in the word of God. According to this platform, the church in general consists of the whole company of the redeemed; but the state of the visible church militant was before the law economical, or in families; under the law, national; and since Christ, only congregational, or in local companies. In number a church ought not to be greater than may ordinarily meet together conveniently in one place, nor fewer than can conveniently carry on church work. The supreme power of the church belongs to Jesus Christ, who deposes extraordinary power to apostles, etc., and ordinary power to every particular church; officers are necessary to the well-being but not to the being of a church. Extraordinary officers, as apostles, are temporary; the ordinary, which are bishops (the same as elders or pastors) and deacons, are perpetual. A deacon's official acts are confined to temporal affairs. Any church may elect and depose its own officers, but in so doing the advice of neighboring churches should be sought. Ordination is the solemn putting a man into his office; it follows his election. In respect to Christ, the head, the church is a monarchy; in respect to the body or the brotherhood, it is like a democracy; in respect to the presbytery, or company of ministers, it is an aristocracy. Synods, though not necessary to the being, are useful to the well-being of the churches; but synods are not permanent ecclesiastical bodies. It is declared that local churches are of right distinct, equal, self-governed under Christ; yet that they should be gathered and should proceed in communion with each other; which communion they are to exercise by mutual care, by consultation, by admonition, by sharing in acts of worship, by needful transfer of members, by relief and succor. Synods have not power of church-censure and discipline, but are to declare the principles on which such acts are based, and their decisions are to be submitted to if found consonant with the word of God. The platform deals also, as its date required, with the relation of civil magistrates to affairs ecclesiastical. The platform is accepted and largely followed by the congregational churches as a useful guide, and as a strong presentation of the principles of church order given in the New Testament; but its enforcement upon any church as an authoritative rule would of course be attempted in vain.

CAMBRONNE, PIERRE JACQUES ETIENNE, 1770-1842; a French general of great renown for daring bravery, and a devoted servitor of Napoleon, whom he accompanied to Elba. He was in command of the imperial guard at Waterloo, and when entirely surrounded, and the battle utterly lost, he contemptuously refused to surrender, but fought until literally cut down. He was nearly killed, but lived to go to London, where he heard that in France he was charged with an attack upon his own country, to answer which he at once went to Paris and demanded a trial. This was granted, and he was honorably acquitted, and after the revolution of July he was restored to his rank in the army.

CAMDEN, a co. in s.e. Georgia, on the ocean and the Florida border, n. of St. Mary's river, and including Cumberland island in the Atlantic; 600 sq.m.; pop. '70, 4615-3157 colored. It is level, with sandy soil, rice being the chief production. Co. seat, Jeffersonton.

CAMDEN, a co. in central Missouri, on the Osage river, and touched by the Atlantic and Pacific railroad; 600 sq.m.; pop. '70, 6108-149 colored. It has lead mines, and an undulating surface, and tolerably fertile soil, producing tobacco, corn, wheat, etc. Co. seat, Lynn Creek.

CAMDEN, a co. in s. w. New Jersey, e. of Delaware river, traversed by five railroads, all centering at Camden, the chief town, opposite Philadelphia; 220 sq.m; pop. '70, 46,193. Surface mostly level and fruitful, producing grain, butter, milk, vegetables and fruits for city markets. Co. seat, Camden.

CAMDEN, a co. in n.e. North Carolina, n. of Albemarle sound and e. of Pasquotank river; 280 sq.m., a portion of which is in the Dismal Swamp; pop. '70, 5631-2121 colored. The Dismal Swamp canal extends in this county to the Pasquotank at South Mills. Productions—corn, sweet potatoes, and cedar and cypress timber. Co. seat, Camden Court-House.

CAMDEN, the seat of justice in Wilcox co., Ala., 33 m. s.w. of Selma; pop. '70, 3060-2225 colored. The village is on an eminence 4 m. from the Alabama river, and is the center of an important trade.

CAMDEN, the seat of justice of Washita co., Ark., 82 m. s.w. of Little Rock, at the head of navigation on the Washita river, in a good situation for trade; pop. '70, 1612-612 colored. The place was formerly a rendezvous for hunters.

CAMDEN (*ante*), a city in New Jersey, opposite Philadelphia, 87 m. from New York, and an important railroad and shipping point; pop. '70, 20,045. The streets are on the rectangular plan, but wide, and the city shows many fine buildings, including the rail-

road depots, opera house, etc. There are iron foundries, chemical works, and some other manufactories. C. was chartered as a city in 1831.

CAMDEN, in Kershaw co., S. C., 102 m. n.w. of Charleston, at the terminus of the C. branch of the S. C. railroad; pop. '70, 1007—555 colored. Two battles were fought in the vicinity in the war of the revolution; the first on Aug. 16, 1780, when the English commander Cornwallis defeated Gates and the revolutionary forces, mortally wounding baron De Kalb; and a less important engagement a year later, when Greene and the Americans were repulsed by the English under Rawdon. In 1825, a monument was erected at Camden to the memory of De Kalb, the corner-stone of which was laid by Lafayette.

CAMDEN, a co. in s.e. New South Wales, Australia, on the Pacific ocean; 2200 sq. m.; pop. '66, 22,734, but now much larger. It is the largest grain-producing county in the colony; has iron mines, and vast herds of cattle. Capital, Berrima.

CAMEL, a machine for floating ships over shoals and bars. A long water-tight box, or caisson, nearly filled with water, is sunk on either side and attached to the ship, and then the water in the caissons is pumped out, adding additional buoyancy as they become empty. The C. is sometimes employed in raising sunken ships, and the principle is applied to dry-docks in some instances.

CAMELLIA *CEÆ*, an order of exogenous trees and shrubs in s. and e. Asia and South America; North America has four species. The tea plant and the camellia are specimens.

CAMELOPARDA'LIS, a constellation defined by Hevelius, between the pole-star, Auriga, Cassiopeia, and the head of Ursa Major, consisted of stars of the 4th and lower magnitudes, forming, in imagination, the shape of a giraffe.

CAMEL'S HAIR is woven by Persians and Arabs into material for tents and clothing. In early ages rough garments of this stuff were worn by monks and priests by way of penance. A fine article of camel's hair is used for pencils by artists.

CAMELS HUMP, or CAMEL'S BACK MOUNTAIN, one of the peaks of the Green mountains, 4188 ft. high; 17 m. w. of Montpelier, Vt.

CAMENÆ, nymphs with prophetic powers in Roman mythology, named Egeria, Carmenta, Antevorta, and Postvorta. The poets sometimes give the name to the nine muses.

CA'MENZ, or KAMENZ, a t. in Saxony, 22 m. n.e. of Dresden; pop. '71, 6406. In 1742, the town was nearly destroyed by fire. Lessing was born here, and in 1826 a public hospital was dedicated to his memory.

CAMERA'RIOUS, RUDOLPH JAKOB, 1665—1721; a German botanist and physician, professor of medicine and director of the botanic garden at Tübingen. He was the first to observe and establish the sexual theory of plants.

CAMERON, a parish in s.w. Louisiana, on the gulf of Mexico; surface low, with many swamps; productions, agricultural; pop. '70, 1591—342 colored. Chief town, Grand Chenière.

CAMERON, a co. in n.w. Pennsylvania, traversed by the Philadelphia and Erie railroad; 400 sq. m.; pop. '70, 4,273. Productions, agricultural. Co. seat, Emporium.

CAMERON, a co. in Texas, on the gulf of Mexico and the Rio Grande; 3,000 sq. m.; pop. '70, 10,999—157 colored. The portion along the Rio Grande is very fertile; the remainder is grazing land. Co. seat, the city of Brownsville, opposite Matamoras.

CAMERON, DONALD, a Scottish highland chief who fought for the pretender and was wounded at Culloden, but escaped to France. He was the "Lochiel" of Campbell's poem.

CAMERON, JAMES DONALD (usually called "DON" CAMERON), b. Harrisburg, Penn., 1833; eldest son of Simon; graduated at Princeton college in 1852, and since largely engaged in iron, coal, and manufacturing industries of his state. As president of the Northern Central railroad, he did great service to the union cause during the war. In 1876, he was appointed secretary of war, and in Mar., 1877, succeeded his father as U. S. senator. In 1879, he was chosen chairman of the republican national committee in place of Zachariah Chandler, deceased. This position he resigned in 1880.

CAMERON, SIMON, b. in Lancaster co., Penn., 1799. In 1845, he was elected by the democrats to the U. S. senate, but joined the republicans on the organization of that party, and was by them re-elected to the senate in 1856. In 1861, he was secretary of war, and in 1862 minister to Russia. Twice again he was chosen senator, in 1866 and in 1874, and was succeeded in that office in 1877 by his son, James Donald. He is one of the leading financiers and business men of the state.

CAMERONITES, a sect in France, followers of John Cameron of Scotland. They are moderate Calvinists, and assert that the will of man is determined only by the practical judgment of the mind; that the cause of men's doing good or evil proceeds from the knowledge that God infuses into them; and that God does not move the will physically, but only morally, by virtue of its dependence on the mind. This peculiar doctrine

of grace and free-will was adopted by many eminent teachers who thought Calvin's doctrine too harsh.

CAMEROONS' (*ante*), mountains on the w. coast of Africa between 3° 57' and 4° 25' n., and 9° and 9° 30' e.; a volcanic mass covering 700 sq. m., the highest about 13,000 feet. They touch the gulf of Guinea on the w. and south. Capt. Burton ascended these mountains in 1861, finding the sides for about 4000 ft. covered with a dense growth of palms, acacias, figs, cardamoms, cabbage-trees, oaks, ferns, and bamboos. Higher up were smaller trees, and at 4580 ft. there began a labyrinth of lava streams and fields of slag. At about 8000 ft., craters appeared, of which there are nearly 30. The natives tell of an eruption in 1838.

CAMILLA, in Roman fable, a virgin wonderfully swift of foot who aided Turnus against Æneas. She was said to be a daughter of king Metalus.

CAMILLUS AND CAMILLA, applied in ancient Rome to the boys and girls who shared in sacrificial ceremonies. If they were designed for the priesthood, it was necessary that their parents should be still living and free-born.

CAMINATZIN', or **CACUMAZIN**, d. 1521; king of Mexico; nephew of Montezuma. He was one of the victims of the treachery of Cortes, against whom he had declared war. At the instigation of Cortes, Montezuma invited his nephew to the city of Mexico to make a reconciliation with the invaders. He replied that he would enter that city only to destroy the enemies of the country. Still influenced by Cortes, Montezuma had the young prince seized, but his captors permitted Cortes to get possession of him, and he was kept a prisoner until the expulsion of the Spaniards. He probably died soon after the siege of Mexico.

CAMISARDS, the name given to the peasantry of the Cevennes, a mountainous region in s. France, who for several years from 1702 kept up an organized military resistance to the *dragonnades*, or conversion by torture, death, and confiscation of property, by which, after the revocation of the edict of Nantes, the Roman Catholic leaders endeavored to enforce their authority in all the Huguenot districts. The name is of doubtful origin; some say it was from *camise*, a white shirt or frock, outwardly worn by the peasants; others that it was from *camisade*, a night attack; and still others, from *camis*, a road runner. The C. were also called *barbets* (or water dogs, a term also applied to the Vaudois), *vagabonds*, *assemblers* (a name given to a meeting or convention of Huguenots), *fanatics*, and *children of God*. They belonged to the romance-speaking people of Gothic descent, who took part in the earliest movements towards religious reform. It was in Languedoc that the peace of God and the mercy of God were formed in the 11th c. against the miseries of private war. (See **GOD'S TRUCE**, *ante*.) There were preserved the forms of municipal freedom, which nearly all Europe had lost; and there commerce flourished without spoiling the thrift, the patience, or the simplicity of the national character. Calvin was warmly welcomed when he preached at Nîmes, and Montpellier became the chief center for the instruction of Huguenot youth; but it was in the triangular mountainous plateau called Cevennes (see **CÉVENNES**, *ante*), among the small farmers, the cloth and silk weavers, and the vine-dressers, that Protestantism was most universal and intense. The people were, and still are, very poor; but they are intelligent and pious, and add to the deep fervor of the Provençal character a gravity that is probably the result of the trials and sufferings of their ancestors.

To understand the position of the C. in the war which began at the commencement of the 18th c. it is necessary to glance at the preceding history of France. The system of toleration which was established by the edict of Nantes (see *ante*), April 13, 1598, and the edict of Grace, July, 1629, was essentially a political compromise, and not a recognition of religious equality. The right of having a private chapel was given to certain seigneurs. New public churches were to be authorized at a certain rate in certain places. On the other hand, Calvinists were admitted to all public posts and to all professions; and they could publish books in towns where they had churches. The chamber of edict was formed in the parliament of Paris for the impartial judgment of cases brought by Huguenots; and the half-Catholic, half-Protestant constitution was adopted in the town consulates and the local parliaments of the south. After the short struggle between Louis XIII. and the duc de Rohan, the Huguenots settled down into contented industry; the army and navy of France were led by two Huguenots—Turenne and Duquesne—and Cardinal Bentivoglio wrote to the pope that he no longer found in France the insane fervor for right of conscience so radical among the Huguenots. But the court in which Mme. de Maintenon had succeeded to Mme. de Montespan, where Louvois, and the Jesuit, père la Chaise, were as supreme as Bossuet and Flechier in the church, could not long be satisfied with tolerated heresy, which they chose to consider as veiled rebellion. On the death of Mazarin a commissioner had gone over the kingdom to inquire into the titles, or rather to suppress as many as possible, of the Huguenot churches, schools, and cemeteries. The extirpation of heresy had indeed been provided for by a clause in the marriage contract between Louis and Maria Theresa as long before as 1660, and in spite of the protection of Colbert, a policy was begun of gradually

destroying the privileges of dissenters. They were shut out from public offices and trade corporations; they were forbidden to marry with Roman Catholics, and the conversion of their children seven years old and upward was encouraged and almost enforced. The famous edict came in Oct., 1685. It directed all dissenting churches to be destroyed, forbade their religious meetings under pain of imprisonment and confiscation of property, ordered all pastors who would not change their faith to be banished within fifteen days and to stop preaching at once, promised exemption from taxes and increased salaries to converted ministers, suppressed Huguenot schools and directed all children to be baptized and brought up in the Roman Catholic faith, prohibited all Huguenots except ministers from going abroad, and declared the property of those who had already gone to be forfeited unless they returned within four months. These were the main points of the edict revoking the liberal edict of Nantes. In carrying it out Huguenot Bibles and books of instruction were burned, and Huguenots were forbidden to hire themselves as artisans or as domestic servants. Torture, hangings, insults worse than death to women, the galleys, and imprisonment for life were the ordinary occurrences of the next sixty years. In the twenty years preceding the revocation, it is believed that 400,000 Protestants fled from France, and that 600,000 escaped in the twenty years that followed. But in the Cevennes the people were too poor to escape, and all over Languedoc began the secret meetings of the church of the desert. At last Louvois, the sanguinary war minister of Louis XIV., proposed that this district should be made an actual desert. An army of 40,000 was raised, and forts were erected at Nîmes, St. Hippolyte, Alais, and Anduze. The abbe du Chaila, a Roman Catholic missionary from Siam, had been appointed inspector of missions in the Cevennes. He introduced the "squeezeers" (an instrument of torture which resembled the Scotch "loot"), and his cruelty at last broke the patience of the victims. His assassination, July 23, 1702, was the first blow in the war. There was to have been a general massacre of Roman Catholic priests, but the plan failed, and the originator, Esprit Segnier, soon fell. He was succeeded by La Porte, an old soldier, who, as his forces increased, assumed the title of "colonel of the children of God," and named his country the "camp of the eternal." His captains were selected from those on whom the prophetic influence had fallen, such as the forest-ranger, Castanet; the wool-carders, Conderc and Mazel; and the soldiers, Catinat, Joany, and Ravenel; but the most famous were Roland and Jean Cavalier, the baker's boy (see CAVALIER, JEAN). For three years the C. held out. Then there was sent against them an army of 60,000, among them an English brigade which had just returned from the persecution of the Vaudois. A policy of extermination was commenced, and in the upper Cevennes alone 466 villages were burned, and nearly the entire population put to the sword. In this bloody work the pope, Clement XI., assisted by issuing a bull against the "execrable race of the ancient Albigenses," promising remission of sins to the holy militia which was now formed among the Roman Catholic population under the name of cadets of the cross. The formidable force brought against them induced Cavalier to listen to proposals, and he finally assented to a surrender on being guaranteed liberty of conscience, the right of assembly outside of walled towns, the liberation of all his people then in durance, and the restitution to emigrants of their civil rights and property. Still, the greater part of the army, under Roland, Ravenel, and Joany, refused, and insisted upon the complete restoration of the edict of Nantes. They continued the war until the beginning of 1705, by which time their leaders were killed or dispersed and they became disorganized. In 1711 all outward signs of the reformed religion had disappeared, and Mar. 8, 1715, a few months before his death, Louis XIV., by a special medal and by proclamation announced the entire extinction of heresy. Fourteen years afterward, in spite of the strictest surveillance aided by military occupation, there had been organized in Languedoc 120 churches, which were attended by 200,000 Protestants. Persecution could not secure suppression, but it was not until 1775 that the last galley slave from Languedoc was liberated, and not till 1789 that the national assembly repealed all the penal laws against Protestantism.

There was a singular psychologic or spiritual phase in the history of the C. that must be noticed. It was a sort of inspiration or ecstasy. The subject, who had endured long fasting, became pale, and fell insensible to the ground. Then came violent agitations of the limbs and the head; and finally the patient, who might be a little child, a woman, or a half-witted person, began to speak in good French of the Huguenot Bible, warning the people to repentance, prophesying the immediate coming of the Lord in judgment, and claiming that these exhortations came directly from the Holy Ghost. After a long discourse the patient returned to his native patois with no recollection of what he had been doing or saying. All kinds of miracles, so they believed, attended upon the Camisards. Strange lights guided them to places of safety, unknown voices spoke encouragement, and wounds were often harmless. Those who were in the ecstasy of trance fell from trees without sustaining hurt; they shed tears of blood, and they subsisted without food for nine days. The supernatural was a part of their life. Many judgments have been passed upon these phenomena. Flechier and Brueys, Roman Catholics, consider them the product of fasting and vanity, nourished by apocalyptic literature. Bertrand and Calmeil, physicians speak of magnetism, hysteria, and epilepsy, and a prophetic mania based on belief in divine possession. Most Protestants

are content with the epithet "ecstasy," while semi-radical Roman Catholics consider the whole business the work of the devil.

CAMMERHOFF, JOHN FREDERICK, 1721-51; b. in Germany, and one of the first Moravian bishops in America, where he arrived in 1756, as assistant to the bishop then presiding. He won the confidence of the Indians, with whom he was a great favorite. In 1750, he attended an important Iroquois council at Onondaga, N. Y., making a canoe journey of 13 days up the Susquehanna, and going thence on foot through the wilderness, an exertion which ruined his health.

CAMPAN, a t. in France, in the department of Hautes-Pyrenees, 18 m. s.e. of Tarbes; pop. 3700. It is in a valley of the same name, on the Adour, and is noted for picturesque scenery, for a stalactite grotto, and marble quarries, along the road to Bagnères de Bigorre. Some of the finest of colored marbles, with green, flesh-colored, red, and white veins, are found here. The women are employed in knitting scarfs and wonderfully thin gauze from fine wool brought from Spain.

CAMPANI-ALIMENIS, MATTEO, an Italian philosopher and mechanician of the 17th century. He was a curate in Rome, but devoted his time mainly to scientific pursuits, constructing the object-glasses with which two of Saturn's satellites were discovered; making illuminated and noiseless clocks; and attempting to correct the variations of the pendulum due to temperature. He published a work on horology. Guiseppe, a younger brother, was also an optician and astronomer of some eminence.

CAMPANI'NI, ITALO, b. Parma, 1846; an Italian tenor. He enlisted in the army of Garibaldi when fourteen years of age, and took part in the fight before Milazzo. Having discovered during the campaign that he had a wonderful voice, he studied singing for two years at the conservatory of Parma, and made his first appearance as the notary in *La Sonnambula* at one of the theaters of his native town. He sang with very little success with different opera companies till 1869. In that year he went to Milan and placed himself under the tuition of the celebrated teacher, Francesco Lamperti. After a thorough training he made his debut in *Faust* at La Scala of Milan, and was pronounced by a critical audience to be one of the finest tenors of the age. In 1872, he made his London debut as "Genaro," in *Lucrezia Borgia*, and in 1873 sang with Christine Nilsson in New York. He returned to America during the season of 1879-80. Besides being the greatest tenor living, he is remarkable for the immense scope of his repertory, which includes nearly 80 operas, the tenor rôles of which he can sing at a few hours' notice.

CAMPBELL, a co. in n.w. Georgia, on the Chattahoochie river and the Atlantic and Westpoint railroad; 360 sq.m.; pop. '70, 9,176-2,587 colored. Among its minerals are gold and iron. Productions, corn, wheat, and cotton. Co. seat, Campbellton.

CAMPBELL, a co. in n. Kentucky, on the Ohio and Licking rivers; 120 sq.m.; pop. '70, 27,406-282 colored. The surface is level in the bottom lands, and undulating away from the rivers; soil generally fertile, producing grain, tobacco, etc. Co. seat, Alexandria.

CAMPBELL, a co. in n.e. Tennessee, on the Kentucky border; watered by Clinch river; 450 sq.m.; pop. '70, 7,445-428 colored. It has a rough surface, and is traversed by a spur of the Cumberland mountains, and is to a large extent covered with forests. It produces corn, wheat, and sugar. Co. seat, Jacksonburgh.

CAMPBELL, a co. in s. Virginia, between James and Staunton rivers, intersected by the Atlantic, Mississippi and Ohio railroad; 576 sq.m.; pop. '70, 28,384-14,543 colored. It has an uneven surface, and fertile soil; producing tobacco, corn, wheat, etc. Co. seat, Campbell Court-house.

CAMPBELL, ALEXANDER, D.D., 1788-1866; b. in Ireland; educated at Glasgow university, and came to the United States in 1809, settling in Bethany, Penn., as pastor of a Presbyterian church, from which he soon departed and organized a society whose doctrine was that the Bible should be the sole creed of the church. His followers increased, and are now known as "Disciples of Christ," or "Campbellites," and number about half a million. Dr. C. was the author of many works on religious subjects, and held important controversies with such disputants as Robert Owen, archbishop Purcell, Rev. N. L. Rice, and Rev. Wm. McCalla.

CAMPBELL, ARCHIBALD. See ARGYLE, DUKE OF, *ante*.

CAMPBELL, WILLIAM, 1745-81; b. in Va.; an officer in the revolutionary war. He was among the earliest of the patriot troops from that colony, and was distinguished in the conflicts of King's mountain and Guilford, for which he was promoted to be brig.gen. He died in Lafayette's camp, just before the Yorktown surrender.

CAMPBELL, WILLIAM, Lord, d. 1778; the last English governor of South Carolina. He was a capt. in the navy; a member of parliament in 1764; in 1766, governor of Nova Scotia, and 1775, of South Carolina. He was active in stirring up the Indians against the colonists, and was in the expedition led by sir Peter Parker against South Carolina, in the course of which he received the wound that caused his death.

CAMPBELLITES. See DISCIPLES OF CHRIST.

CAMPE, JOACHIM HEINRICH, 1746-1818; a German teacher educated at Halle in theology, and chaplain at Potsdam. In 1787, he was counselor of education in Brunswick, where he published books for schools, and established a prosperous business. His works on education have been widely circulated, not only in German, but in other languages.

CAMPEACHY, one of the states of Mexico occupying the s. part of the peninsula of Yucatan, and bordering on Guatemala and the Belize; 26,000 sq.m.; pop. about 90,000, of whom a large proportion are Indians. The soil is for the most part sandy and unproductive, but there are good pasture lands. The main productions are rice, sugar, and salt.

CAMPEGGIO, or CAMPEGGI, LORENZO, 1479-1539; in early life a lawyer, but on losing his wife he joined the Roman Catholic church and rapidly rose to the position of cardinal. In 1519, he was sent to England to preach a crusade against the Turks, but was unsuccessful. Henry VIII. made him bishop of Salisbury in 1524, and he came again to England in 1528 to assist Wolsey in the case of Henry's divorce from Catherine. He accomplished nothing, however, and the see of Salisbury was taken from him.

CAMP HAUSEN, WILHELM, b. 1818; a German painter whose specialty is battle pieces, to qualify for which he served as a volunteer in the army. Among his works are "Tilly at Breitenfeld," "Prince Eugene at Belgrade," "Godfrey de Bouillon at Ascalon," "Puritans watching the Enemy," "A Convoy of Prisoners of Cromwell's Camp," "Cavaliers and Roundheads," "Storming of an English Castle by Cromwell's Soldiers," "Charles II. in the Retreat from Worcester," "Charles I. at Naseby," etc. In 1859, he was made professor of historical painting in the Dusseldorf academy.

CAMP HUYSEN, DIRK RAFAELSZ, 1586-1627; a Dutch painter, theologian, and poet. He made a translation of the Psalms, and wrote many short poems of merit; also several theological works, among which was a compendium of the doctrines of Socinius. His fame rests upon his work as a painter, which was more than ordinarily good.

CAMP IAN, or CAMPION, EDMUND, 1540-81; one of the few English Jesuits of celebrity; educated at Oxford; ordained deacon in 1567, but as he could not consent to the Protestant formulary as required by the English church, he went to Ireland and wrote a history of that country; and then to Douay, where he joined the society of Jesus. In 1580, he returned to England as a propagandist missionary. The next year he was charged with exciting the people to rebellion and holding treasonable correspondence with foreign powers, found guilty, and hanged at Tyburn, with several others of his order.

CAMPIDOGLIO, PALAZZO DEL, a pile of buildings erected by Michael Angelo on the Capitoline hill, in Rome, on the site of the ancient capital.

CAMPOBASO, a province in s. Italy, 1178 sq.m.; pop. '70, 364,208. The surface is almost wholly mountainous, the highest point being monte Miletto, 6,740 feet. Chief products, grain, wine, and vegetables. There are manufactories of steel and iron ware. The most important stream is the Biferno.

CAMPOBASO, NICOLÒ, Count of, a soldier of fortune in the 15th c.; the son of a noble family whose estates were confiscated because he sided with Anjou in a war against Naples. He sold his services to Charles the bold, but subsequently betrayed him, and was suspected of being concerned in Charles's death. Walter Scott depicted C. in *Anne of Geierstein*.

CAMPOBELLO, an island in Passamaquoddy bay, 2 m. from Eastport, Maine, belonging to New Brunswick; 8 m. long; pop. 1073. There are copper and lead ores; but fishing is almost the only occupation.

CAMPUS, in ancient Rome, a vacant space in or near a city, for public shows, combats, etc. There were eight around Rome, of which the C. Martius (camp of Mars) was the most important. It was outside the walls, occupying the level space between the Quirinal, Pincian, and Capitoline hills. In this met the *comitia centuriata* and the *comitia tributa*; and in it was the public hall for the use of the magistrates and foreign ambassadors, who were not permitted to enter the city. In later times it became a pleasure ground, with shaded walks, gardens, baths, theaters, and a race-course. Julius Cæsar built within it the marble halls for the comitia; Agrippa the baths and the pantheon; Augustus his own mausoleum; and Statilius Taurus the first stone amphitheater. Later emperors crowded this particular C. with public buildings and private residences. Under Aurelian it was taken in as a part of the city. The district in which the old C. was situated is now called Campo Marzo. Another ancient C. was the Sceleratus, the polluted field, where vestals who had been untrue to their vows of chastity were buried alive. The open grounds around modern colleges often bear the name of campus.

CAMUS, CHARLES ETIENNE LOUIS, 1699-1768; a French mathematician, associate of the Paris academy of sciences, and member of the royal society of London. In 1736, he accompanied Maupertuis and Clairaut in an expedition to Lapland to measure a degree of the meridian. He was the author of a *Course of Mathematics*, and several essays on mechanical and mathematical subjects.

CANAAN, the fourth son of Ham, and grandson of Noah. The posterity of Canaan were numerous, there being ten sons who were the fathers of as many tribes dwelling in Palestine and Syria. His eldest son, Zidon, is supposed to have been the founder of the city of Sidon. The whole of Palestine was called after the patriarch the "Land of Canaan." As to the curse pronounced by Noah upon Canaan and his descendants, there is no just reason to suppose that it was the immediate consequence of the unfilial conduct of Ham.

CANAANITES, a collective name for the several nations conquered by the Israelites on the w. side of Jordan. Five, six, seven, and ten nations are mentioned in various places in the Old Testament; but of only two of them have we any collateral information—the Hittites, and the Amorites. And the former of these appears to have been included not with strict propriety among the Canaanites, evidence now tending to show that they not only dwelt beyond the border of Canaan, but did not even speak a Semitic language; nor were they homogeneous with other Canaanitish people. In general, the Canaanites are described as living in a state of political disintegration; the combined result of Semitic love of independence, and of varied conformation of the soil. Thirty-one of their petty kings are mentioned in the book of Joshua. That the Israelites were not immediately successful in conquering the C. is now universally recognized. The work of many years was concentrated by tradition on a single great name. The immediate result of the Israelite invasion was, not the extinction of the old, but the addition of a new element of stronger material, but less advanced culture. The chief object of Canaanitish worship was the dual-natured god of life and fruitfulness, Baal, or the Baal, "the lord," and his consort Asherah, "the happy." The masculine form of the latter was the name of one of the twelve sons of Jacob. Asherah must not be confounded with Ashtoreth or Astarte, who belonged to another type of Semitic religion. The symbol of Asherah was the stem of a tree, though possibly sometimes carved into an image; that of the Baal probably had the form of a cone and represented the rays of the sun, or the generative power. It is these symbols which are referred to in the phrase "the Baals and Asherahs" (Judges iii. 7), where "the groves" of the king James's version is clearly a mistranslation. The licensed harlotry which formed a part of the worship of Asherah was peculiarly obnoxious to the later Hebrew prophets, though, indeed, even the folk-lore of the Israelites shows traces of aversion to its attendant immorality. Another characteristic of the Canaanitish religion was sooth-saying, and this was vigorously denounced by the conquerors (Deut. xviii. 10-14). There were relics of Canaanitish times in old traditions which the Israelites did not suppress, and it is alleged by uncompromising historical critics that some of the narratives in Genesis are revised and purified versions of Canaanitish legends. The most obvious of these are said to be the stories which are attached to localities in Canaan, such as Luz and Beersheba. The question whether a remnant of the old population of Palestine may not be still in existence is answered in the affirmative by several recent investigators, who find descendants of the C. in the fellahs or peasants of the Holy Land. From an ethnological point of view there seems to have been a close affinity of the three peoples, the Israelites, the C., and the Phœnicians, who appear to have migrated successively from a Babylonian center, and the last to move westward were probably the Hebrews.

CANADIAN RIVER, rising in n.w. Mexico, 25 m. n.e. of Santa Fé, running s. 150 n., and then e. near the bounds of the Indian territory and Texas, thence through the Indian territory, and emptying into the Arkansas river near the w. boundary of the state of Arkansas; whole length about 600 miles.

CANAJOHARIE, a t. and village of Montgomery co., N. Y., 50 m. n.w. of Albany; pop. of township '75, 4,241. There are fine stone quarries in the vicinity.

CANANDAIGUA (*ante*), a beautiful village in Ontario co., N. Y.; the co. seat, situated at the n. extremity of Canandaigua lake, 24 m. s.e. of Rochester, on the New York Central railroad, where it is joined by the Rochester and Elmira, and the Canandaigua, Black Rock and Tonawanda railroads. The village is celebrated for picturesque scenery and the elegance of its private residences. Pop. '75, 7,771. Among the public buildings are a fine court-house, two orphan asylums, several churches, an academy, and a seminary for women. The Indian name "Canandaigua" means "the chosen spot."

CANANDAIGUA LAKE, in Ontario co., N. Y., 15 m. long by about 1 m. wide; 668 ft. above the tide and 437 ft. above lake Ontario, into which it is emptied by the Clyde and Seneca rivers. It is surrounded with high banks and charming scenery, and its steamboats are largely patronized by pleasure-seekers.

CANBY, EDWARD RICHARD SPRIGG, LL.D.; 1819-73; b. Ky.; a graduate of West Point; served in the Florida and the Mexican war, and in the war of the rebellion; in 1862, made brig.gen. of volunteers, and maj.gen. in 1864. He was severely wounded on two occasions, and was often chosen for special and difficult duty. In 1866, he was commissioned as brig. in the regular army. In the winter of 1872-73, he was sent to make a settlement of the difficulties between the Modoc Indians and the whites of n. California and Oregon, and was holding a talk under a flag of truce near his camp when he was treacherously shot by capt. Jack, one of the Modoc leaders.

CANCALE, a seaport of France, 10 m. e. of St. Malo, on the bay of St. Michael; famous for its oyster trade; pop. '72, 3814. In 1758, the duke of Marlborough here landed an English army of 14,000, intending to attack St. Malo, but returned without making the attempt.

CANCAN, a wild dance, or rather a series of violent gymnastic exercises, originated by the demi-monde of Paris. Though perhaps quite as decorously clad as the opera-ballet, the C. is considered out of the pale of respectable diversions. There is some resemblance between it and the wild orgies of the Bacchic or Dionysian festivals of ancient Greece.

CANCAO', **CANCAR**, or **KANG-KAO**, also known as **PONTHIAMUS** or **POTAIMAT**, the capital of a small state in w. Cambodia, on the e. side of the gulf of Siam, at the mouth of the river Cancao, 10° 14' n. and 105° 55' east. It was once the center of Cambodian trade, but in 1717 the Siamese drove out the merchants who had settled there, since which time the trade of the town has greatly decreased. The harbor is shallow, but there is a good depth of water in the river.

CANCERIN', **GEORGE**, Count, 1774-1845; a Russian statesman, educated in Germany, and employed in various capacities in Russian service. In 1813, he was commissary-gen. of all the forces, and in 1814, he accompanied the emperor Alexander to Paris. He was minister of finance from 1823 until his death. He was one of the few Russian writers on political economy.

CANDACE, queen of the portion of upper Nubia called by the Greeks Meroë, probably corresponding with the present province of Athbara, between 13° and 18° north. From its fortunate situation, Meroë became one of the richest countries in the world. Candace appears to have been the name of several female rulers in Ethiopia. The one here meant invaded Egypt 22 B.C., but was defeated by the Roman governor, Petronius, who destroyed Napata, the queen's capital city. The queen was leniently treated by Augustus. The high chamberlain or treasurer of Candace was converted to Christianity by Philip the evangelist, and there is a tradition that through the efforts of this officer the queen herself was converted.

CANDAHAR', or **KANDAHAR**, a mountainous province of Afghanistan, s.w. of Cabool. It is for the most part sterile, though there are fruitful belts along the rivers where tobacco, grain, and fruits are produced. A large transit trade passes through C. between India and Persia. Candahar once formed a part of the latter kingdom; was afterwards subjected to the sovereigns of Delhi; was once more annexed to Persia, but after the death of Nadir Shah it became a province of Afghanistan. The people are Mohammedans, chiefly of the Sunni sect.

CANDAULES. See **GYGES**, *ante*.

CANDIA, or **MEGALO-CASTRON**, formerly the capital and still the most populous city of Crete, on the n. shore of the island, 13° 20' n., and 25° 9' east. It is surrounded by fortifications built by the Venetians, but which are now out of repair; and much of the town has also been much injured by earthquakes. The main buildings are the pasha's palace, 14 mosques, three churches, a monastery, the bazaars, and the baths. It is the seat of an archbishop of the Greek church. The chief trade is in oil and soap, besides which there is considerable coasting commerce. There are manufactures of leather and of wine. The pop. is from 15,000 to 18,000, of whom about two thirds are Turks. Candia occupies the site of the ancient Heracleion, the seaport of Gnosus. The present city was founded by the Saracens in the 9th c.; was fortified in the 12th c. by the Genoese, and greatly strengthened by the Venetians in the following three centuries. It was taken by the Turks in 1669 after a stubborn defense by the Venetians, who lost 30,000 men.

CANDIAC, **JEAN LOUIS PIERRE ELIZABETH DE MONTCALM DE**, 1719-26; a child of wonderful precocity, b. in Nîmes, France. At four years of age he read Latin, either printed or written; at six he understood Greek and Hebrew, had a remarkable acquaintance with arithmetic, history, geography, and heraldry, and had read many of the best authors. He died in Paris at the age of seven.

CANE DELLA SCALA, 1291-1329; known also as **CAN GRANDE**, "great dog," a noted prince of Verona, who took Padua from the Guelphs. In 1318, he was appointed to the chief command of the Ghibelline forces, which brought upon him the pope's excommunication. After several victories, he was seized with illness while making a triumphal entry into Treviso, and died in the cathedral of that city. His court was the most important political and social center of the time, entertaining Dante, among other men of learning. In the *Paradiseo*, Dante eulogizes his patron in glowing terms, and Petrarch also sang his praises.

CANEPH'ORI, girls of Athens annually selected from the highest families to walk in the Panathenaic and other processions in festivals, carrying on their heads baskets containing the implements and apparatus necessary for a sacrifice. Their graceful attitudes (which may be seen on the friezes of the Parthenon in the British museum) suggested subjects for sculpture to some of the great artists of Greece. Similar statues are

also used in architecture to support light entablatures, and are sometimes identified with caryatides.

CANGA-ARGÜELLES, JOSE', 1770-1843; a Spanish statesman who was an active opponent of Napoleon, and an energetic member of the cortes of 1812. On the return of the Bourbons he was exiled to the province of Valencia. Under the restoration of 1820, he was made minister of finance, in which position he made many reforms. After the overthrow of the constitution in 1823 he went to England, but returned to Spain in 1829, and was appointed keeper of the archives at Simancas. He wrote *Elements of Finance*; a *Dictionary of Finance*; and *Observations on the Peninsular War*.

CANGE, DU. See DUFRESNE, CHARLES, *ante*.

CANGIA'GI, or CAMBIA'SO, LUIGI, 1527-85; a Genoese painter, taught by his father. He gained celebrity at an early age, and, in 1583, was invited to Spain by Philip II. to assist in the decoration of the Escorial, in which he painted the ceiling of the choir, representing the "Assemblage of the Blessed," which is considered his best work. Among others of his works are the "Rape of the Sabine Women," the "Sleeping Cupid," and "Judith."

CANI'NA, LUIGI, CAVALIERE, 1793-1856; b. in Piedmont; an architect and archaeologist. He was professor of architecture at Turin, and superintended the excavation of Tusculum in 1829, and of the Appian Way in 1848. He wrote many works on architecture and archaeology, some of which were published in the most sumptuous manner by his patroness, the queen of Sardinia.

CANINES, or CANINE TEETH, the four teeth, two in each jaw, which are pointed and stand between the incisors and the bicuspid; sometimes called "eye teeth" or "stomach teeth." In lions, wolves, dogs, and other carnivora they are large and strong, for holding prey and tearing raw flesh.

CANI'NI, GIOVANNI AGNOLO, 1617-66; b. in Rome; a painter and engraver, pupil of Domenicheno and of Barbalvenga. He painted altar-pieces in Rome, among which are the "Martyrdom of St. Stephen," and that of St. Bartholomew. He was engaged by Colbert to design from medals, antique gems, and other sources, portraits of the most illustrious characters of antiquity; but he died soon after the work was begun, leaving the completion to his brother Marcantonio, who, with the assistance of Picard and Valet, published, in 1699, 150 engravings.

CANISIUS, PETRUS, 1521-97; a Dutch Jesuit, who took a prominent part in the council of Trent in 1545; was preacher to Ferdinand I., and the first ecclesiastical governor of the Jesuits in Germany. He established colleges of the order at Prague, Fribourg, Ausburg, and Dillengen. He was the author of two catechisms, the larger and the smaller, the latter of which has passed through more than a hundred editions.

CANKER (*ante*), in the human being, is developed chiefly among children in the form of ulceration of the mucous membrane of the mouth, commonly the result of indigestive derangement. In general it is only a local and temporary affliction, and may be removed by proper application of nitrate of silver, either solid or in a solution, or with borate of soda.

CANKER WORM, *Anisophterys*, a genus of destructive insects of the order *lepidoptera* and family geometridæ. The female moths, from the eggs of which this worm comes, are wingless. In the spring they creep up the trunks of trees, on which they deposit their eggs. These soon produce the worms, which feed upon young leaves of fruit-trees and of nearly all cultivated trees. After about four weeks of feeding they creep down, or let themselves down by a web, and burrow in the ground, where they change to chrysalis, and remain until the following spring. Like other geometridæ, the worm has six legs forward and four stout prop legs behind. In consequence of their singular mode of locomotion they are often called measuring, or inch or span, or loop worms or geometers. As the female moth cannot fly, trees may be protected from this worm by surrounding their trunks with a hollow vessel filled with oil or thin tar, which prevents the ascent of the egg-laying moth; but in recent years the sparrows introduced from England have entirely subdued this worm in many districts that had been completely denuded of leaves almost every summer. This remedy, however, is worse than the disease. The English sparrow is not, in general, an insect-eating, but is a grain-eating bird; it is very pugnacious, and as prolific as the rabbit; it has driven away the native birds wherever it has gained a footing, and as there are many other insect leaf-eaters which it will not touch, and which no other birds are left to destroy, the trees are in nearly as great danger as before, while the grain-fields of farmers are beginning to suffer severely from the ravages of the sparrows.

CANNA, a plant of the order *marantaceæ*, a species of reed, the fruit of which is a hard black seed growing in a capsule. The starch of C. is sometimes used instead of arrow-root. It grows along the coast in the southern states, and is becoming a common ornamental plant in the north.

CAN'NABIS INDICA. See HEMP, *ante*.

CANNEL COAL. See COAL, *ante*.

CANNELTON, a t. in Perry co., Ind., 70 m. above Evansville; pop. '70, 2,481. Near the town are the most extensive coal mines below Pittsburg. Fire-clay, sandstone, and limestone are also abundant. There is a large cotton mill in the village.

CANNON, a co. in central Tennessee; 220 sq.m.; pop. '70, 10,502—927 colored. The surface is uneven, but the soil is generally fertile, producing grain, tobacco, etc. Co. seat, Woodbury.

CANNONSBURG. See CANONSBURG.

CANNSTADT, or KANNSTADT (*ante*), a t. in Wurtemberg, $2\frac{1}{2}$ m. n.e. of Stuttgart, in a fertile and populous part of the country, and now one of the most flourishing towns in Germany. Among its public buildings are a cathedral of the 15th c., a town hall, the royal theater, market house, etc. The Wilhelm palace, built in 1842-51, for king William, is a fine specimen of elaborate Saracenic architecture. The more important industries are spinning, cotton-weaving, dyeing, and the manufacture of machinery. The mineral springs, about 40 in number, attract a large temporary population of those who suffer from dyspepsia and nervous weakness. In the hill of Seilberg, near by, are caverns in which many fossils are preserved. Down to the middle of the 15th c., C. was the capital of Wurtemberg. Pop. '71, 11,804.

CANO, ALONZO, 1601-65: a Spanish painter, called by his countrymen the "Michael Angelo of Spain." His master-piece is said to be the "Conception of the Virgin" in the church of San Diego, in Granada. He was a contemporary of Velasquez, and was court painter to Philip IV. He was a man of violent temper, and was once tried (but acquitted) on a charge of having killed his wife, when the judges who put him to torture, exempted his right arm from the rack, because of its surpassing skill in art. In statuary his famous works are a Madonna and Child, and colossal figures of San Pedro and San Pablo.

CANO, or CANUS, MELCHIOR, 1523-60; a Spanish theologian and bishop, professor at Salamanca. By reason of his violent opposition to the establishment of the Jesuits in Spain, he was sent to the Canaries, but by the king's influence, was soon afterwards permitted to return, and became provincial of the Dominican order.

CAÑON (Sp. a "tube"), used in the western states and territories to designate a deep ravine, especially if worn down by running streams. Of late the word is often spelled *canyon*. There are many cañons in the Rocky mountain region and further westward; but the greatest is the Grand Cañon of the Colorado, which is more than 300 m. long, with nearly perpendicular walls from 3,000 to 7,000 ft. high. Through this awful gorge the river flows, now down swift declines, now in peaceful pools, or long stretches of navigable water.

CAÑON CITY, in Fremont co., Colorado, on the Arkansas river at the foot of the Rocky mountains, and on the Denver and Rio Grande railroad. There is unlimited water-power, and in the neighborhood are iron, silver, copper, coal, petroleum, marble, and limestone. There are also hot and cold medicinal springs.

CANONESS, the name given to female members of certain orders in the Roman Catholic church, who seldom took monastic vows, but lived in common. The communities were favored by noblemen, who intrusted their daughters to them, but with the privilege to marry at any time. After the reformation, there were Protestant houses of similar kind in Mecklenburg and Westphalia.

CANONICAL VIRGINS, young women of the early church who took vows of perpetual virginity, but were not gathered into communities. They were inrolled at their homes, where they continued to reside.

CANONICUS, a Narragansett Indian chief, 1565-1647; the constant friend of the early white colonists, and especially of Roger Williams, to whom he was strongly attached. It was from him that Williams obtained his title to the lands that now constitute Rhode Island.

CANONICUT, or CONANICUT, an island in Narragansett bay, about 8 m. long by 1 wide. It forms the town of Jamestown, R. I.; pop. '70, 378.

CANONSBURG, a t. in Washington co., Penn., on the Chartier's Valley railroad, 22 m. s.w. of Pittsburg; the seat of Jefferson college and of the Pennsylvania reform school. Pop. '70, 641.

CANSO, CAPE, the e. point of Nova Scotia; a port of entry, with a large fishing trade. There is a light on Cranberry island, in $45^{\circ} 19' \text{ n.}$, $60^{\circ} 55' \text{ west.}$

CANSTEIN. KARL HILDERBRAND, Count of, 1667-1719; studied law at Frankfort, but did not practice because of failing health. At Berlin he became intimate with Spencer and Francke, who persuaded him to devote his time to increasing the circulation of the Bible, and that led him to form the Bible society at Halle which bears his name. He published the New Testament for about 8 cents, and the whole Bible at a proportionate price. He wrote a *Life of Spenser*, a *Harmony of the Gospels*, and other theological works.

CANTABRIA, a district in Spain on the s. coast of the bay of Biscay. The old geographers give the name to nearly the whole of the Biscayan coast, but it is now

restricted to the province of Santander and the e. portion of Asturias; indeed, Cantabria is not now a geographical division.

CANTACUZE'NUS, **JOHANNES**, b. about 1300 at Constantinople; a statesman, general, and historian, and under Andronicus II. had principal charge of the government. When Andronicus died he was left regent, the successor being John Palæologus, then only nine years old. C. was suspected by the empress, fled from Constantinople, and got himself crowned in another place. Six years of civil war followed in which the rivals employed foreign mercenaries of every description, and nearly ruined the empire. C. formed an alliance with the sultan of Broussa, agreeing to send his daughter to his ally's harem and to permit the sultan to make slaves of the Greek subjects. In 1346, he entered Constantinople and became joint emperor with John, but retained full power during John's minority. He badly governed the almost ruined empire until 1354, when John made an easy success, and C. took refuge in a monastery, where he wrote a history of his life and times.

CANTALOUPE, or **MUSK-MELON**, a well-known fruit, taking its name from Cantalupo in Italy. It is extensively cultivated in the United States, and is much esteemed for the table.

CAN'TEMIR, **ANTI'OCIUS**, or **CONSTANTINE DEME'TRIUS**, 1704-44; the youngest son of Demetrius Cantemir. He was a member of the St. Petersburg academy; wrote satires, and assisted in fixing versification and developing Russian poetry. At the age of 30 he was sent as minister to Great Britain, and in 1736 to France. He was a successful diplomatist, and was highly esteemed both at home and abroad. Besides translating into Russian the main works of Anacreon and Horace, he wrote odes, satires, and fables, and translated important works from French and Italian.

CAN'TEMIR, **DEME'TRIUS**, 1673-1723; a son of a Moldavian prince and heir to the throne, which, however, he never claimed, preferring to serve the Turks. In 1710, he was appointed prince to resist the expected invasion of Peter the great. Convinced that ruin would come to the Turks, C. joined the czar and shared in the unfortunate campaign on the Pruth in 1711. When peace was made, Peter refused to surrender him to the Turks, and kept him employed in Russia, where he became a great favorite. His most important work was a history of the rise and fall of the Ottoman empire.

CANTIUM, a Roman district in ancient Britain, covering nearly the same territory as the modern co. of Kent. Cæsar speaks of the inhabitants as the most civilized people of the island.

CANTON, a city in Fulton co., Ill., on the Chicago, Burlington and Quincy, and the Toledo, Peoria and Western railroads; 210 m. from Chicago, and 28 m. from Quincy; pop. '70, 3,303. Manufacturing and coal mining are the main industries.

CANTON, a t. in Lewis co., Mo., on the Mississippi river and the Mississippi Valley and Western railroad, 200 m. above St. Louis, and 22 m. below Keokuk; pop. '70, 2,363. It is a prominent shipping place, has a number of manufactories, and is the seat of Canton university, an educational institution under the charge of the Christian denomination.

CANTON, a t. in St. Lawrence co., N. Y., on Grass river and the Rome, Watertown and Ogdensburg railroad; 60 m. n.e. of Watertown; pop. '75, 6,123. It is the co. seat, and has a court-house, almshouse, St. Lawrence university, and several churches. There is abundant water-power, used in the manufacture of lumber, flour, etc.

CANTON, a t. in Stark co., O., on the Pittsburg, Fort Wayne and Chicago railroad, 100 m. n.e. of Columbus. There is abundance of water-power, and considerable manufacturing is carried on. Coal and limestone are found, and the surrounding country is a fine wheat-growing district.

CANTON, **JOHN**, 1718-72; an English natural philosopher, who made valuable discoveries in the then new science of electricity. For constructing artificial magnets he was honored with the membership and a gold medal of the royal society, and, in 1757, he became one of the council of the society. He was the first person in England to verify Franklin's theory of the identity of lightning and electricity, having, in 1752, obtained fire from the clouds during a thunder-storm. He and Franklin almost simultaneously discovered that some clouds were charged with positive and others with negative electricity, a circumstance that made them warm personal friends. C. opposed the theory then generally accepted that water was incompressible.

CANVAS-BACK, *fuligina (athya) vallisneria*, a species of duck frequenting the Atlantic coast of the United States, greatly prized for its flesh. The canvas-back reaches its highest perfection in and around Chesapeake bay, where these birds pass the winter after returning from their breeding grounds in the far north-west. In its annual migrations it is taken in great numbers in the marshes which surround the southern extremity of lake Michigan, where the *zostera vallisneria*, or so-called wild celery, known to be identical with the plant of that name in the Chesapeake bay, abounds.

CAPAN'NORI, a city of Italy, 5 m. e. of Lucca; situated in a fertile plain, on the railroad from Pisa to Florence; pop. '71, 48,313.

CAPE AGULHAS. See AGULHAS, *ante*.

CAPE ANN, in n.e. Massachusetts, 31 m. from Boston; $42^{\circ} 38'$ n., $70^{\circ} 35'$ w.; has two fixed lights 90 ft. above tide, and about half a mile apart. There are two other lights on Thatcher's island, about a mile off shore. There are valuable stone-quarries at the cape. The whole rocky peninsula generally included under this name, projects about 30 m. into the Atlantic ocean.

CAPE BAB-EL-MANDEB. See BAB-EL-MANDEB, *ante*.

CAPE BIANCO, the most northerly point of Africa, on the Mediterranean; $37^{\circ} 20'$ n., $9^{\circ} 48'$ east.

CAPE BLANCO, or ORFORD, in s.w. Oregon, $42^{\circ} 45'$ n., $125^{\circ} 45'$ w.; 25 m. from the mouth of the Rogue river. A little s. of the cape is Port Orford; on the cape is a light 125 ft. above tide.

CAPE BLANCO, on the w. coast of Africa. See BLANCO, *ante*.

CAPE BOE'O, the w. point of Sicily, a mile from Marsala; $37^{\circ} 28'$ n., $12^{\circ} 25'$ east. Off this cape, in 241 B.C., the Romans gained a naval victory over the Carthaginians, closing the first Punic war.

CAPE BOJADOR'. See BOJADOR, *ante*.

CAPE BON, or RAS ADDER, in Tunis, Africa, $37^{\circ} 6'$ n., $11^{\circ} 3'$ e., at the entrance of the gulf of Tunis.

CAPE BRETON, a co. in e. Nova Scotia, a part of the island of the same name, nearly surrounded by the ocean; pop. '71, 76,424. Coal is the chief production. Chief town, Sydney.

CAPE CANAVERAL, about the middle of the Atlantic coast of Florida, $28^{\circ} 27'$ n., $80^{\circ} 33'$ west. It has a revolving light 139 ft. above the water. There are dangerous shoals around the cape.

CAPE CHARLES at the n.e. entrance of Chesapeake bay, Virginia. On Smith's island there is a revolving light $37^{\circ} 3'$ n., $76^{\circ} 2'$ west. This cape is the extreme s. projection of the "eastern shore" of Maryland.

CAPE CLEAR, a high promontory on the s. side of Clear island, co. Cork, Ireland, usually the first land seen when steamers are approaching England from America. There are two lights, one in $51^{\circ} 26'$ n., $9^{\circ} 29'$ w.; and one on Fastnett rock, $3\frac{1}{2}$ m. n.w. by s. from the cape, 148 ft. above high water.

CAPE COD (*ante*), the n.w. point of the long sandy strip running around Cape Cod bay and forming Barnstable co., Mass., inclosing Provincetown and Cape Cod harbors. The name is applied also to the whole strip of land. On Race point, at the n. extremity, there is a revolving light 155 ft. above tide, in $42^{\circ} 4'$ n., $70^{\circ} 15'$ west. There are also several other lights. The cape was discovered by Gosnold 18 years before the arrival of the pilgrims.

CAPE COLONY. See CAPE OF GOOD HOPE, *ante*.

CAPE COMORIN. See COMORIN, *ante*.

CAPE DIAMOND, the high rock at the junction of the St. Lawrence and the St. Charles on which stands the citadel of Quebec.

CAPE DISAPPOINTMENT, or CAPE HANCOCK, the s.w. point of Washington territory, at the entrance of Columbia river; $46^{\circ} 16'$ n., $124^{\circ} 2'$ w.; has a white light 232 ft. above the water.

CAPE DUCATO. See DUCATO, *ante*.

CAPE ELIZABETH, in the town of that name in Cumberland co., Me., 6 m. s.e. of Portland, $43^{\circ} 33'$ n., $70^{\circ} 11'$ w. There are two lights, one fixed and one floating. The town is a suburb of Portland, and a popular summer resort; pop. '70, 5,106.

CAPE FAREWELL, the s. point of Greenland, a precipitous headland on an island; $59^{\circ} 49'$ n., $43^{\circ} 54'$ w. The currents, the ice, and the winds combine to make this probably the most boisterous point on the globe.

CAPE FEAR, the s. point of Smith's island at the mouth of Cape Fear river in North Carolina; $33^{\circ} 48'$ n., $77^{\circ} 57'$ w. There is a light about a mile from the shore.

CAPE FEAR RIVER, in North Carolina, formed by the Haw and Deep rivers, and affording navigation from the ocean to Wilmington, and further for steamboats. It enters the Atlantic n. of Smelt island.

CAPE FINISTERRE'. See FINISTERRE, *ante*.

CAPE FLATTERY, the extreme w. point of the United States (except Alaska), in Washington territory, s. of the strait of Juan de Fuca. On an island half a mile from the cape is a light, $48^{\circ} 20'$ n., $124^{\circ} 43' 48''$ west.

CAPE FLORIDA, the s. extremity of Key Biscayne in Dade co., Fla., e. of the Everglades. There is a fixed white light.

CAPE GATA, or CAPE DE GATTE, a promontory of Spain in the province of Granada extending into the Mediterranean; a mass of rock about 24 m. in circumference.

The most notable of the pile is the ancient Promitorium Charidemi, the Moorish Kheyran, and is formed chiefly of agates, spars, and crystals. The cape was once a resort of Moorish pirates.

CAPE GIRARDEAU, a co. in s.e. Missouri, on the Mississippi and the St. Louis and Iron Mountain railroads. It is level, fertile, and well cultivated; producing wheat, corn, oats, potatoes, tobacco, etc.; 875 sq.m.; pop. '70, 17,558—1646 colored. Co. seat, Jackson.

CAPE GIRARDEAU, a city in the co. of the same name in Missouri on the Mississippi river, 100 m. below St. Louis; pop. '70, 3,585. It is in a rich and well cultivated section. St. Vincent's college, Roman Catholic, is the principal public institution.

CAPE GUARDAFUI. See GUARDAFUI, *ante*.

CAPE HATTERAS (*ante*), the point of the coast of North Carolina stretching furthest into the Atlantic, and by far the most dangerous part of the American coast for navigators, on account of shoals and frequent gales and storms. Coasting vessels are apt to be crowded up towards this cape by the gulf stream, which is only about 20 m. east. There is a light near the cape 192 ft. above the sea. Cape Hatteras is off about the middle of Pamlico sound, and is one of the most desolate and barren regions on the U. S. coast.

CAPE HENLOPEN, on the e. coast of Delaware, at the s. entrance of the Delaware bay, 13 m. s.s.w. of cape May, which is in New Jersey, on the other side of the entrance. Cape Henlopen is in 38° 47' n., 75° 5' w., and has a fixed light 182 ft. above the sea.

CAPE HENRY, on the coast of Virginia, at the s. entrance to Chesapeake bay, opposite to cape Charles in Maryland; 36° 56' n., 76° 4' w.; has a fixed light 120 ft. above the sea.

CAPEL, ARTHUR, Lord, 1600-49; representative of Hertford, in the Long parliament of 1640. He was a royalist officer, acting with lord Colchester and Edward Hyde as a general, and was in the actions of Bristol, Exeter, and Taunton. At Colchester, he was compelled by famine to surrender to Fairfax. He was tried for treason and executed Mar. 9, 1649. He was the author of *Daily Observations or Meditations*.

CAPEL, THOMAS JONX, b. 1835; an English Roman Catholic priest. When but 17 years old, he, with others, founded a normal training college for the education of school-teachers, of which, in 1856, he was chosen president. Being compelled to seek southern Europe on account of ill health, he founded at Pau a mission for English-speaking Roman Catholics, in consequence of which the pope advanced him to "monsignore," a position equivalent to that of bishop. Returning to England, in 1873 he established the Roman Catholic public-school at Kensington, and devoted much of his time to preaching. In 1874, he published a *Reply to Gladstone's Political Expostulation*.

CAPELL, EDWARD, 1713-81; b. in Suffolk, England; a Shakespearean annotator and critic. As deputy-inspector of plays, he became so much disturbed by the inaccuracies in the current edition of Shakespeare, that he projected an entirely new print, carefully compared with the original as far as possible. This was published at the expense of the London book-sellers. He continued his Shakespearean researches during his life, and shed much light on the great author's works. He also published a volume of ancient poems under the title of *Probusions*.

CAPE LOOKOUT, on the e. coast of North Carolina, 85 m. s.w. of cape Hatteras; 34° 7' n., 76° 33' w., having a fixed white light 100 ft. above tide.

CAPE MATAPAN', the s. extremity of the continent of Europe, in Greece, between the gulf of Laconia and Kalamatia, 36° 23' n., 22° 29' east. The ancient Greeks called it Tienarium, and made it sacred to Neptune, whose temple stood near the cape, the remains of which are yet to be seen.

CAPE MAY, the s. point of New Jersey, at the n.e. entrance to Delaware bay. There is a revolving light 152 ft. above tide; 38° 56' n., 74° 57' west.

CAPE MAY, a co. in s. New Jersey, on the ocean and Delaware bay, intersected by the Cape May and Millville railroad; 250 sq.m.; pop. '70, 8349. The surface is level, and somewhat swampy, with alluvial soil, producing grain, hay, and fruit. In one of the swamps is a deposit of cedar trees, the timber of which is still good, though it must have been under-ground more than 2000 years. Co. seat, Cape May Court-house.

CAPE MAY, or CAPE ISLAND, a t. village, and celebrated watering place, in Cape May co., N. J.; connected with Philadelphia by railroad; sometimes called Cape city or Cape Island city. There is a fine beach several miles long, and the bathing facilities are of the first order. The hotels are numerous, and of modern construction, and in summer the place is the favorite resort of Philadelphians as well as of people from cities more remote. The climate is usually equable and pleasant.

CAPE MENDOCINO, in Humboldt co., Cal., the extreme w. point of the state; 40° 26' 24" n., 124° 23' 27" west. There is a flashing light 428 ft. above the water.

CAPE NORTH. See MAGEROE, *ante*.

CAPE ORTEGAL', the n. extremity of Spain, projecting into the bay of Biscay in the province of Corunna; 43° 47' n., 7° 56' w.; on a rugged and barren coast.

CAPE PALMAS, the s. extremity of Liberia, Africa, 4° 27' n., 7° 44' west. This was the point at which the Maryland colony of free colored emigrants settled in 1834. The surrounding country is one of the Liberian states, and is called Maryland. There is a light-house on the cape.

CAPE PRINCE OF WALES, in Behring sea, the w. point of the mainland of Alaska, directly opposite to East cape in Siberia, the strait between the two being the narrowest water between America and Asia. The cape is a few miles s. of the Arctic circle, and terminates in a bold bluff, n. of which are dangerous shoals.

CAPE RACE, the s.e. point of Newfoundland, usually the first American land seen by steamers from England, 46° 40' n., 52° 54' west. There is a revolving light 180 ft. above the sea. The cape terminates in a bold rough headland.

CAPERS, WILLIAM, D.D., 1790-1855; a Methodist minister of South Carolina, in early life a missionary among the Indians in Georgia. He was for several years presiding elder in Charleston, where he edited the *Wesleyan Journal*, afterwards merged in *Zion's Herald*, and still later changed to the *Christian Advocate and Journal*, of New York. In 1838, he was representative to the Wesleyan conference in England, and in 1855 was chosen professor of the evidences of Christianity in the South Carolina university. In 1846, he was elected bishop, and filled the office until his death.

CAPE SABLE, the s. point of the mainland of Florida, and the s.e. extremity of the mainland of the United States, 26° 55' n., 81° 15' west. The cape is occupied by fort Poinsett.

CAPE SABLE, the s. point of Nova Scotia, 43° 26' n., 66° 38' west. There is a light on Cape Sable island, which island has a pop. of about 600 fishermen.

CAPE SAN LUCAS, the s. point of the peninsula of Lower California, 22° 44' n. 109° 54' west. Directly e. across the gulf is the Mexican port and city of Mazatlan.

CAPE SAN ROQUE, in n.e. Brazil, in the province of Rio Grande, 5° 28' s., 35° 16' west. Behind the cape is a bay, on which is the town of St. Joseph.

CAPE SPARTIVENTO, in s. Italy, in the Mediterranean, 37° 57' n., 16° 5' east. The ancients called it "Hercules' Promontorium," and supposed it to be the most southerly point of Italy.

CAPE ST. VINCENT, the s.w. extremity of Portugal, 37° 2' n., 9° west. Off the cape, Feb. 14, 1797, the English admiral Jervis defeated a Spanish fleet much larger than his own.

CAPE TITMOUSE, *Rarus capensis*, a small bird of the cape of Good Hope, remarkable for its curious nest, which is built of cotton or other fiber in the form of a bottle, and suspended from the limb of a tree. On the outside, near the opening, is built a pouch or pocket, in which the male bird rests while the female is on the nest, and when she leaves he manages by strokes of his wings to close the mouth of the nest, to prevent intrusion while they are in search of food.

CAPE TRAFALGAR'. See TRAFALGAR, *ante*.

CAPE VINCENT, a t. in Jefferson co., N. Y., on the St. Lawrence river; pop. of township, '75, 3,180. The village is a port of entry; is in connection with Watertown by railroad, and with Kingston, Canada, by ferry.

CAPISTRANO, GIOVANNI DI, 1386-1456; an Italian lawyer who became a Franciscan monk and a powerful and popular preacher. In 1450, the pope sent him to Germany to preach against the Hussites, and also to forward the projected crusade against the Turks, who threatened to overrun Europe. He failed to start the crusade, but in the siege of Belgrade he led the inhabitants with the cross in his hand in three successful sorties. He was canonized, and his tomb became a popular resort for pilgrims.

CAPITAL PUNISHMENT (*ante*) under the laws of the United States may be inflicted for treason, murder, arson, rape, piracy, robbery of the mails with jeopardy to the lives of persons in charge, rescue of a convict going to execution, burning a vessel of war, and corruptly destroying a private vessel. Until within a few years C. P. was the rule for the highest crimes in all the states, but it was abolished in Wisconsin and in Maine in 1874, and had been about that time abolished in Iowa; but in the latter state it was restored in 1878, the argument showing from the record that during its abolition crimes of violence had largely increased. Under the present law, a year must intervene between the sentence and execution, and the term may be further extended by reprieve. There is much difference of opinion as to the effect of the abolition of the death penalty, and perhaps no settled conclusion can be reached. The effect of its abolition has not thus far supplied any very strong reasons for the stand of those who would abolish it altogether. Perhaps the most notable suspension of this punishment in all history was during the war of the rebellion in the United States, when, in the face of the most powerful, open, and dangerous treason, not one person was deliberately executed for that crime, the extreme penalty visited even upon the captured leader of the rebellion being the loss of the political (but not the personal) rights of a citizen.

CAPITOLINE GAMES, instituted 337 B.C., in commemoration of the preservation of the Roman capitol (fortress) from the Gauls. Nero revised them, modeled them after the Olympian games, and proposed to institute a new computation of time founded upon the 5-year period intervening between the celebrations.

CAPITOLINE HILL. See CAPITOL, *ante*.

CAPITOLINUS, JULIUS, a Latin historian of the 3d c., who wrote the lives of several of the Roman emperors, and was one of the authors of the *Historia Augusta*.

CAPPE, NEWCOME, 1732-1800; an English dissenting clergyman who studied under Doddridge, and adhered to Dr. Priestley's Unitarian doctrine. He was pastor of a dissenting congregation in York for more than 40 years, and was one of the ablest and most eloquent of his denomination. He was also the author of a number of devotional works.

CAPPEL, a French family of scholars, theologians, and lawyers. GUILLAUME, in 1491, had the boldness to refuse the payment of tithes demanded by the pope. JACQUES, his son, was counselor of state under Francis I., and in 1537 made a powerful speech against Charles V. LOUIS, son of Jacques, was professor of theology at Sedan, and more than once risked his life in the cause of Protestantism. One of his acts was to present to Charles IX. the confession of faith drawn up by the Protestants of Paris. Two others, a son and grandson of Jacques, were distinguished, one in the law, and the other in theology, history, philology, and antiquities. Both these were named JACQUES; and the younger was the father of LOTIS, the most celebrated member of the family (1585-1658), who studied at Sedan, Oxford, and Saumur, and was professor of Hebrew at the latter place. He devoted much attention to the text of the Scriptures. On the revocation of the edict of Nantes, Louis fled to England, where he died. His life was published by his nephew JAMES, who at only 19 years of age was professor of Hebrew at Saumur.

CAPRA'RA, GIOVANNI BATTISTA, 1733-1810; an Italian statesman and bishop, who served as papal legate or nuncio at Cologne, Lucerne, Vienna, and to the French republic in 1801, where he arranged the concordat of that year re-establishing the Roman Catholic form of worship. In May, 1805, he crowned Napoleon as king of Italy.

CAPS AND HATS, names of political parties in Sweden in the early part of the 18th c., the former favoring and the latter opposing the alliance with Russia.

CAPTAIN, MILITARY (*ante*). In the U. S. army a C. is responsible for the camp and garrison equipage and the arms and clothing of his company. The rank is between lieutenant and major.

CAPTAIN, NAVAL (*ante*), in the U. S. navy, ranks with a col. in the army, and next below a flag-officer in the navy. Before the war of the rebellion there was no definite legal rank in the navy higher than captain. A C. of marines ranks with a lieutenant in the navy and with C. in the army.

CAPTURE (*ante*). See INTERNATIONAL LAW, *ante*.

CAPUCHINS, *ante*, a branch of the Franciscan order whose rule is essentially the same as that of the friars minor, or Minorites. They were founded by Matthew da Bassi, a Franciscan of Ancora, and were authorized by a bull of Clement VII. in 1528. At first they were persecuted by the other orders, but through the influence of the duchess Cibo, wife of the duke of Camerino, they obtained papal favor, and were permitted to impart their peculiar hooded habit to any who might be willing to join them, to live as hermits in wild and desolate places, to go barefoot, to wear beards, and to call themselves "Hermits Friars Minor." The pope, however, soon gave them the nickname "Cappucino," referring to the hood, one of their more conspicuous articles of apparel. They grew rapidly, and Matthew became the superior of the first convent. They have always had the reputation of great success in making converts. By late accounts they had 82 missions, in Europe, Asia, the East Indies, Africa, and South America. In the United States they have houses in the states of New Jersey, New York, and Wisconsin. Nuns of the order were first established at Naples in 1538.

CARABO'BO, a state in Venezuela on the Caribbean sea; a fertile well-watered region, producing grains, fruits, and cattle. The chief exports are coffee, cacao, indigo, rice, corn, rum, and fruits. The climate is good in the inland region, but the coast is subject to fevers. Capital, Valencia.

CARACOLE, in horsemanship, a sudden half turn, sometimes performed frequently in an attack of cavalry to mislead the enemy as to the point at which the assault is to be made.

CARA'FA DE COLOBRANO, MICHELE, 1785-1872; an Italian composer; in early life a soldier in the French army. Among his operas are *Masaniello* and *Le Solitaire*. He was a member of the Paris academy of fine arts, professor in the conservatoire, director of military music at the gymna'se, and a member of the legion of honor.

CARAITES. See JEWISH SECTS, *ante*.

CARAU'SIUS, a supposed native of Holland, of whom nothing is certainly known except that he had a conspicuous part as an ally of the Romans in the conquest and rul-

ing of Britain near the close of the 3d century. He had been put in command of the fleet in the English channel for the purpose of protecting the coasts of Britain and Gaul from the Frisian pirates; and his conduct had been such that the Roman emperor Maximilian gave an order for his death. C. immediately assumed the title of emperor of Britain, and held power for about seven years, his independence having been acknowledged by the Romans, whose empire was rapidly falling into ruin. He was assassinated at York in 293 by his chief officer and rival, Allectus, who held the imperial title for three years, at end of which time (296) Constantine Chlorus re-established the rule of Rome.

CARAVELHAS, a seaport of Brazil, in the province of Espiritu Santo, near a bay of that name; pop. about 5,000. It is the principal port of the surrounding country, and the head-quarters of the whale fishery of the Abrothos islands, which lie off the coast.

CARBON, a co. in e. Pennsylvania; 400 sq.m.; pop. '70, 28,144; a mining region, on the Lehigh river, and the Lehigh Valley and other coal-transporting railroads. Next to the mining of anthracite coal, the chief business is agricultural. Co. seat, Mauch Chunk.

CARBON, a co. in Wyoming territory, extending entirely across the territory, from Montana to Colorado; 15,000 sq.m.; pop. '70, 1368. The co. is crossed by the Union Pacific railroad. Co. seat, Rawling's Springs.

CARBONATES, chemical substances which are compounds of carbonic acid with a base; e.g., carbonates of lime, potash, soda, iron, lead, copper, silver, etc. Their formulæ are: carbonate of lime (marble), CaO, CO_2 ; carbonate of potash, KO, CO_2 ; carbonate of iron (protoxide), FeO, CO_2 , etc. Affinities of carbonic acid are very weak, carbonates are easily decomposed: by heat, as in reducing marble and limestone to lime; by a more powerful acid, as in the preparation of certain kinds of bread, which are made light by the carbonic acid set free from the bicarbonate of soda, the carbonate of potassa, or the carbonate of ammonia, by the acid of sour milk; by the acid tartrate of potash (cream of tartar); by an acid phosphate, prof. Horsford's method; or by hydrochloric acid; or as in the preparation of so-called soda-water, which is merely common water surcharged with carbonic acid set free from marble chips by sulphuric acid.

CARBONDALE, a city in Luzerne co., Penn., near the head of the Lackawanna river, and on the Delaware and Hudson railroad; 110 m. n.w. of Philadelphia; pop. '70, 6,393. The city was incorporated in 1851, and is in the midst of one of the most important coal-mining districts in the state.

CARBON DISULPHIDE, or BISULPHIDE, also called by workmen sulphur alcohol, a chemical compound produced by burning carbon in an atmosphere of sulphur, or by distilling certain metallic sulphides with charcoal. It is a colorless liquid, of specific gravity of 1.268, and boils at 114° Fahrenheit. It does not combine with water, but readily mixes with alcohol, ether, and other hydrocarbons. It readily dissolves India rubber, gutta-percha, resins, oils, camphor, phosphorus, sulphur, and iodine, and is very inflammable. With oxygen or atmospheric air it forms an explosive compound. It is of great use in manufacturing in many ways, such as vulcanizing India rubber, extracting fat from bones, dissolving oil from seeds, removing sulphur and bitumen from rocks, making pure spices, purifying paraffine; also for destroying vermin, producing artificial cold, making photographic light, cleaning greasy rags, preserving hides and fresh meat, and making delicate perfumes. It is also used to some extent in medicines. The odor of the crude article is most sickening. It has a high refracting power, and is used in prismatic glass bottles for producing, on a large scale, a spectrum, with an electric or a lime light.

CARBONIFEROUS LIMESTONE, or MOUNTAIN LIMESTONE, one of the lower rocks of the carboniferous system, generally of coralline formation, containing magnesia, and rich in organic remains. Some varieties make good building stone.

CARBONIFEROUS SYSTEM (*ante*). Most of the great coal fields of the world belong to this system of formation. In this country, coal is widely distributed over Pennsylvania, Ohio, Illinois, Kansas, Virginia, and other states. It is estimated that there are 400,000 sq. m. of the earth's surface now covered by productive coal fields. Now as there are about 3,100,000 sq. yards in a m., and as a cubic yard of coal weighs nearly a ton, and as in some of the fields the vein or deposit is from 30 to 60 ft. thick, there would not seem to be any immediate danger of failure in the supply of coal. See ANTHRACITE, and COAL.

CARBURETS. See CARBIDES, *ante*.

CARCINOMA. See CANCER, *ante*.

CARDENAS, a seaport and city of Cuba, capital of a district, 105 m. e. of Havana, on a bay of the n. coast, and having railroad communication with Matanzas and Havana. There is good anchorage in the harbor. Sugar is the chief article of export. Pop. 11,000. The streets are well laid out and lighted, and the houses are usually neat and solid. There is a bronze statue of Columbus in one of the squares. Much of the business is

done by people from the United States, a fact that gives it the name of the "American city." In 1850, the city was plundered by Lopez.

CARDIADÆ, a family of bivalve lamelli branchiate mollusks of which the cockle is a specimen.

CARDIFF GIANT, a rude statue of a man 10½ ft. high, cut (in Chicago) from a block of gypsum sent from Iowa. It was secretly buried near the village of Cardiff, Onondaga co., N. Y., where it was pretended to have been found in Oct., 1869, and was exhibited with great success for several months as "the petrified giant," deceiving even some men of science. The fraud, one of the most notable in recent times, was finally confessed.

CARDIGAN, JAMES THOMAS BRUDENELL, 7th earl of; also baron Brudenell, lieut. gen.; 1797-1868. He was educated at Oxford, and went into parliament in 1818. In 1824, he entered the army in the hussars, and rose (1832) to be lieut. col. He was overbearing and quarrelsome, and treated his men with great severity, so that out of a regiment of 350, he made within two years 700 arrests, and held 105 courts-martial. In 1837, he succeeded to the peerage. In 1840, he fought a duel with capt. Tuckett, an officer of his regiment, in which his adversary was wounded. The house of lords subjected the earl to a show of trial, and he was acquitted. The Crimean war sent him to the field as commander of the light cavalry, and he led that body of 600 through the desperate charge at Balaklava, cutting his way through six times the number of Russian heavy cavalry, but leaving half his men dead or wounded on the field. This charge, celebrated in Tennyson's poem, was desperate and brilliant work, but in the opinion of many critics a wanton and needless sacrifice of his men. In 1861, he was made lieut. gen. He left no children, and the titles passed to his relative, the marquis of Ailesbury.

CARDUCCI, BARTOLOMEO, 1560-1610; an Italian artist; b. in Florence; studied under Zuccherò, whom he accompanied to Madrid, where he painted the ceiling of the Escorial library. He died in Spain, where most of his works are to be found, the most celebrated being a "Descent from the Cross," in a church in Madrid. His brother, Vincenzo, was also a painter of celebrity, and the author of a dialogue on the excellencies of painting.

CARDUCHI, a warlike people once inhabiting the mountains of Kurdistan, supposed to have been the ancestors of the Kurds of the present day. The Greeks, in the famous retreat of the 10,000, had to pass through their country, and were greatly harassed by them.

CARDWELL, a co. in central Ontario, Canada, formed recently from Peel and Simcoe cos.; pop. '71, 16,500.

CARDWELL, EDWARD, 1787-1861; an English clergyman and ecclesiastical historian, educated at Oxford. In 1826, he was chosen Camden professor of ancient history, and during his period of office he wrote a translation of the *Ethics* of Aristotle, with notes, and *The Coinage of the Ancient Greeks and Romans*. In 1831, he was made principal of St. Alban's hall, and held the place through life. Among his publications were a student's edition of the Greek Testament; Josephus's history with notes; *Documentary Annals of the Reformed Church of England from 1546 to 1716*; *History of Conferences, etc., connected with the Revision of the Book of Common Prayer*; *Synodalia, a Collection of Religious Canons, and Proceedings of Convocation from 1547 to 1717*; and *Reformatio Legum Ecclesiasticarum*.

CARDWELL, EDWARD, Viscount, b. 1813; nephew of the Rev. Edward; graduated at Balliol college, and admitted to the bar, but preferred political life and entered parliament in 1842, being several times thereafter re-chosen. In 1845, he was secretary of the treasury and president of the board of trade. He was subsequently chief secretary for Ireland, chancellor of the duchy of Lancaster, and secretary of state for the colonies. In Gladstone's cabinet, 1868, he became secretary for war and a member of the committee of the council on education. In the war office he proposed and effected a reorganization of the army. With earl Stanhope he was one of the literary executors of sir Robert Peel, and one of the editors of Peel's *Memoirs*.

CAREW, GEORGE, 1557-1629; Earl of Totness and Baron of Clopton; educated at Oxford and joined the army, holding an important command in the Irish wars against the earl of Desmond. He filled several offices, among them that of one of the lord judges of Ireland, in which by a vigorous but prudent policy he speedily reduced the rebels to submission. His crowning exploit was the capture of Dunboy castle, an event that greatly disappointed the Spanish allies of the Irish, and ended the war. For these services he was raised to the peerage and made governor of Guernsey. His last office was that of privy councillor to James I. He wrote *Hibernia Pacata*, a history of the wars in Ireland.

CAREW, Sir GEORGE, d. about 1613; educated at Oxford, and knighted by queen Elizabeth. He was secretary to sir Christopher Hatton, and was sent as ambassador to the king of Poland. Under James I. he was employed in negotiating the treaty of union between England and Scotland, and afterwards as ambassador to France. He was the author of a *Relation of the State of France*.

CAREW, RICHARD, 1555-1620; an Oxford student who at the age of 14 was chosen to dispute extemporaneously with sir Philip Sidney in the presence of an audience of noblemen. He was sheriff of Cornwall, and the author of a *Survey* of that county, a work that enjoyed a high reputation. He also wrote, or translated from the Italian, *The Examination of Men's Wits*; *The True and Ready Way to Learn the Latin Tongue*; and made a translation of the first five cantos of Tasso's *Jerusalem Delivered*.

CAREY, HENRY, d. 1743; an English musical composer and poet, an illegitimate son of George Saville, marquis of Halifax. Carey's ballads and songs, though of no great merit as compositions, were very popular at the time. He wrote a number of dramatic pieces, among which were *Chrononhotonthologos*, a burlesque on tragedy; the *Honest Yorkshireman*, an operetta; *Nancy and Thomas and Sally*, interludes; *The Dragon of Wantley*, *Margery or the Dragoness*, burlesque operas. One of his songs, *Sally in our Alley*, is still remarkably popular in England.

CAREY, MATHEW, b. Ireland, 1760, d. Philadelphia, 1839; an author and publisher. In consequence of publishing an address to the Irish Roman Catholics on their oppression by the penal code (about 1778) he was compelled to leave Ireland, but returned within a year and established, in 1783, the *Volunteer's Journal*. His attacks upon parliament and the ministry caused his imprisonment in Newgate until the dissolution of parliament. He arrived in Philadelphia by the aid of Lafayette, who sent him \$400, and immediately started *The Pennsylvania Herald*, one of the first papers in the country to furnish accurate reports of legislative debates. In Jan., 1786, he fought a duel with col. Oswald, another editor, and was seriously wounded. He was subsequently connected with the *Columbian Magazine* and the *American Museum*. In 1791, he began trade as a bookseller, and with his sons built up a prosperous business. During the epidemic of yellow fever in 1793 he was active in the work of relief, and afterwards wrote a history of the disease. In 1793, he, with others, founded the Hibernian society, and in 1796 he assisted bishop White in establishing the first Sunday-school society. Carey was a constant writer, and published a great number of essays on party politics, political economy, and social questions. Among his favorite ideas were internal improvements and a protective tariff. His son Henry C. (see *ante*) was one of the foremost American writers on political economy.

CARGILL, DONALD, 1610-81; a leader of the covenanters appointed to a church in Glasgow, where he made himself so obnoxious to the government that he was forced to leave. He was wounded in the battle of Bothwell, and fled to Holland; but returned almost immediately and joined Richard Cameron in publishing the Sanquhar declaration, and boldly excommunicated the king and his officials. He was soon afterwards arrested and beheaded at Edinburgh, July 27, 1681.

CARHEIL, ETIENNE DE, a Jesuit missionary among the Indians of Canada about 1668. He was among the earliest to master the native languages. The time of his death is not known, but he was at missionary work as late as 1721.

CARIBBEE ISLANDS. See ANTILLES, *ante*.

CARIBOU. See REINDEER, *ante*.

CARIBS, Indians of the West India islands, who were in the time of Columbus numerous and powerful; a warlike and aggressive people, who pertinaciously opposed the advances of the Europeans. It is supposed, though not proved, that they were addicted to cannibalism. They have almost entirely disappeared from the islands; and at present their chief settlement is in Honduras, where they form an industrious and prosperous portion of the people, though still retaining their language and many of their customs. In 1796, the English, weary of the continual disturbances occasioned by the Caribs, transported them in a body from Dominica and St. Vincent to the island of Ruatan. There are two great tribes, the red, and the black; the former were descendants of the ancient stock, and the latter mixed with negro blood. Some of the Indians in South America are apparently of the same race.

CARINUS, MARCUS AURELIUS, son of Carus, succeeded his father as emperor of Rome in 283 A.D. He was a cruel and profligate ruler, and the soldiers naturally rebelled, proclaiming Diocletian. Carinus marched into Mœsia to quell the revolt, and won a decisive victory, but at the moment of triumph he was killed by one of his soldiers whose wife the profligate emperor had led away.

CARISBROOKE, a village in the isle of Wight almost adjoining Newport, chiefly noted for its castle, which is supposed to have been built by the Saxons in the 6th century. It was enlarged in the 11th c. by the first lord of Wight; was captured by Stephen in 1136, and in the time of Richard II. successfully resisted attacks by the French. During Elizabeth's reign it was further enlarged until its outer walls inclosed 20 acres. It was in this castle that Charles I. took refuge in Nov., 1647, but he soon found his asylum a prison. After his execution his two youngest children were confined in the castle, and the princess Elizabeth died there. The remains of the castle are still extensive. Opposite the castle-hill are the remains of a Cistercian priory founded in the 11th c., and the parish church claims even a greater antiquity. Pop. of parish '71, 8198.

CARIS'SIMI, GIOVANNI GIACOMO, b. about 1604 near Rome; became chapel-master, or director of music, at the age of 20. By education he belonged to the old Roman school of music, but his compositions mark the turning-point from the traditions of the renaissance period to the incipient aspirations of modern music. His numerous compositions include masses, cantatas, motets, and oratorios.

CARLEE, or **KARLI**, a village in India, 40 m. e. of Bombay, remarkable only for a Buddhist temple hewn into a rocky precipice which rises 800 ft. above the plain, the temple being about two thirds of the way up. The temple is 130 by 40 ft., with a high arched roof. An arch rises over the entrance to the artificial cavern, and before each of the side entrances are screens of stone-work ornamented with naked male and female figures in *alto-rilievo*. In front are three large lions, and around the portico are figures of elephants, each one surmounted by a driver and a howdah or saddle containing figures of two persons. The interior is finished with a double row of sculptured pillars forming a semicircle. This curious temple is well preserved.

CARLETON, a co. in New Brunswick, Can., on the Maine border, drained by the St. John and its tributaries; 3,008 sq.m.; pop. '71, 19,938. The surface is rough, with forests and excellent timber. Chief town, Woodstock.

CARLETON, a co. in e. Ontario, Can., on the Ottawa river; 647 sq.m.; pop. '71, 21,739. The co. is traversed by the Ottawa and Prescott railroad, and the Rideau canal. Lumbering is the principal business of the people. Chief town, Ottawa City.

CARLETON, Sir Guy, Lord Dorchester, 1724-1808; a British officer distinguished at Louisburg, Quebec, and Belle Isle, and wounded in the siege of Havana in 1762. He was a lieut.gen. in the British army, and the successor of sir Henry Clinton in chief command in the American colonies during the war of the revolution and till its close.

CARLINVILLE, a t. and seat of justice in Macoupin co., Ill., on the Chicago and Alton railroad, 39 m. s.w. of Springfield. C. is the seat of Blackburn university, and is an important center for local trade. Pop. township, 1870, 5,808.

CARLISLE (*ante*), the seat of justice of Cumberland co., Penn., on the Cumberland Valley railroad, at the junction of the Pine Grove branch, 18 m. w. by s. of Harrisburg; pop. about 7,000. It is in a highly productive agricultural region; is well built, with wide and handsome streets, and several fine public buildings. Dickinson college was founded here in 1783 by the Methodist denomination. Near the town are the well-known C. barracks; and in the mountains 4 m. n. is C. Springs, a famous watering-place. Washington had his head-quarters in C. during the whisky rebellion in 1794, and in July, 1863, the place was bombarded by the confederates.

CARLISLE, **FREDERICK HOWARD**, Earl of, 1748-1825; an English statesman; one of the commission sent to the American colonies by lord North about 1778 to endeavor to effect a reconciliation, which effort was a failure, not from mismanagement but because of the unpopularity of North's administration. In 1780, C. was made viceroy of Ireland, where, in a very critical period, he managed to maintain peace and promote prosperity. In the discussion concerning the regency, C. favored the prince of Wales, and in the period of the French revolution he was a vigorous supporter of the war. After opposing the corn laws in 1815, he took no further part in public affairs.

CARLISTS. See **CARLOS DE BOURBON** (*ante*) and **CARLOS**, **DON**.

CARLOS, **LUIS MARIA FERNANDO**, **DON**, 1818-61; son of Don Carlos Maria Isidor. In 1846, he lived in England with his father, under the name of Montemolin. In April, 1849, he went in disguise to Spain, was discovered and kept in prison for a few days, but returned to England before the end of the month. In 1860, he invaded Spain with 3,000 men, and was defeated and made prisoner at Tortosa. Being again set free, on condition of renouncing his claim to the throne, his first act was to repudiate that renunciation.

CARLOS, **MARIA DE LOS DOLORES JUAN ISIDOR JOSEF FRANCESCO QUIRINO ANTONIO MIGUEL GABRIEL RAFAEL**, **DON**, b. Mar. 30, 1848; nephew of Luis Maria Fernando; present claimant of the throne of Spain as the legitimate heir of Charles VIII. As Charles VI. died without issue, his rights devolved upon his brother Don Juan, who had married the archduchess Maria Theresa of Austria, princess of Modena. Their son, the present Don Carlos, was educated principally in Austria, and married Margaret de Bourbon, princess of Parma, daughter of the late duke Ferdinand, Charles III., and sister of the present count de Chambord, who claims to be Henry V. of France. In Oct., 1868, Don Juan abdicated in favor of his son, whose standard was raised by some of his partisans in the n. of Spain in April, 1872. On the 16th of July following, Don Carlos published a proclamation calling upon the people of Catalonia, Aragon, and Valencia to take arms in his cause, promising to restore their ancient liberties; and in Dec. his brother, Don Alfonso, assumed command of the Carlist forces in Catalonia. Don Carlos himself made his entry to Spain, July 15, 1873, announcing that he came for the purpose of saving the country. Thenceforward there was incessant war in the n. part of the kingdom or the republic, in which there were victories on both sides; but for the most part the battles were unfavorable to the Carlists, until Feb., 1876, when their cause was completely crushed at Tolosa, the defenders of that last

stronghold flying in a panic toward France. Don Carlos went to Paris, where, Mar. 3, 1876, he proclaimed: "Being desirous of putting a stop to bloodshed, I forbear continuing a glorious but at present fruitless struggle. In the face of a great superiority of numbers, and in view especially of the sufferings of my volunteers, it becomes necessary to return the sword to the scabbard. I will never sign a convention [abandonment of all claims]. My flag remains furled until the moment which God shall fix as the supreme hour of redemption." Don Carlos has five children, four daughters and a son.

CARLOWITZ, or CARLOVITZ, a t. in Hungary, on the right bank of the Danube, 8 m. s.e. of Peterwardein; pop. '73, 4,419. It is the seat of the Greek archbishop for the Austrian dominions, and has seminaries for Greek and Roman Catholic clergy, a gymnasium, a lyceum, and a hospital. It was here that peace between Austria, Turkey, Poland, and Venice was concluded in 1699.

CARLSTADT, KARLSTADT, or KARLOSTADT (real name, ANDREAS RUDOLF BODENSTEIN), 1480-1541; a German reformer, at first a friend and afterwards an opponent of Luther. He became a professor in Wittenberg, first in philosophy and then in theology, and in 1511 was rector of the university, about which time he became a personal friend of Luther. Carlstadt went to Rome to study canon law, returning to Wittenberg in 1515, where he took up the defense of Reuchlin, the scholar against whom a violent persecution was raging. In 1517, he published arguments asserting the supreme authority of the Scriptures, and declaring that in the silence of Scripture, appeals from the fathers of the church must be made to reason. When Luther nailed his thesis to the door of the church, Carlstadt supported him. In the bill against Luther, Carlstadt was especially named and condemned; and he was the first to appeal from the pope to a general council. In 1521, by invitation of the king, he went to Denmark to teach the doctrines of the reformation; but he soon returned. About this time, differences sprang up between Carlstadt and Luther, owing to the former's hot-headedness; he demanded violent measures, where Luther desired prudence and patience. While Luther was imprisoned, Carlstadt greatly impaired the cause by his extreme course, and at last Luther declared against him. Being compelled to leave Wittenberg, Carlstadt became a pastor in Thuringia, where his violence created a suspicion that he was associated with Anabaptists, and that he might be implicated in the schemes of the peasant revolt. The elector sent Luther to find out the true state of affairs; and when Luther preached against Carlstadt at Jena, they held a discussion on the "real presence," which Carlstadt was the first to deny, and an open quarrel broke out between them. Carlstadt was ordered out of Saxony, and wandered from place to place exciting tumults, and prompting the people to destroy pictures and images in the churches. Again suspected of provoking insurrection, he was pursued and exposed to hardships, and even danger to his life. In this extremity he appealed to Luther, through whose influence he was permitted to return to Saxony, where for some years he led a quiet life. This quiet was unendurable by his restless spirit, and he once more attacked Luther; the controversy, in which Zwingli agreed with Carlstadt in his views of the Lord's supper, grew fiercer than ever, and Carlstadt, who was no longer permitted to dwell in Saxony, fled to Friesland, and thence to Switzerland, where Zwingli's influence made him a pastor, and afterwards an archdeacon at Zurich. In 1534, he settled as professor of theology in Basel, remaining there until his death. He was the first priest to write against celibacy, and the first Protestant clergyman to take a wife.

CARLTON, a co. in n.e. Minnesota, on the Wisconsin border, intersected by the Northern Pacific and Lake Superior railroads; 900 sq. m.; pop. '70, 286. Surface uneven, and for the most part covered with maple and pine trees.

CARLTON, THOMAS, D.D., 1809-74; b. N. H.; a Methodist minister, who in 1829 began his work in the Western New York conference in Rochester, Buffalo, and other places. He was for 20 years the principal agent of the Methodist book concern, in New York city.

CARLUDOVICA PALMA'TA, a South American shrub or tree bearing the leaves from which Panama hats are woven, the best of which are plaited from a single leaf, the work requiring many weeks of labor.

CARLYLE, JOSEPH DACRE, 1759-1804; educated at Cambridge, and a fellow of Queens' college. He succeeded Dr. Paley as chancellor of Carlisle, and in 1794 was appointed professor of Arabic at Cambridge. He had already published a translation of an Arabic history of Egypt, and in 1796 he issued a volume of *Specimens of Arabic Poetry*. Lord Elgin procured Carlyle's appointment in the Turkish embassy, which gave him an opportunity to travel in the east, where he collected Greek and Syrian manuscripts for a contemplated revision of the New Testament, but he did not live to do the work.

CARMAGNOLA, FRANCESCO BUSSONE, Count of, 1390-1432; a celebrated brigand, at first in the service of the duke of Milan, who made him count and governor of Genoa. Having fallen from the duke's favor, Carmagnola became a gen. in the Venetian army, and took Brescia from his former master, whom he defeated in 1427. In 1431, he incurred the suspicion of the Venetian senate because of certain military failures, in consequence of which he was tortured and finally beheaded.

CARMARTHEN. See CAERMARTHEN, *ante*.

CARMICHAEL, GERSHOM, 1672-1729; a Scotch metaphysician, educated at Edinburgh university, in which institution he became a master, an office which was converted to the professorship of moral philosophy in 1727. He was a successful teacher, but often in difficulty with his superiors in consequence of his hasty temper. His works are a treatise on logic and the psychology of the intellectual powers, in which he affirms that all knowledge may be resolved into immediate judgments known in their own light; a synopsis of natural theology; and an edition of Puffendorf's *De Officio Hominis et Civis*.

CARNARVON. See CAERNARVON, *ante*.

CARNEIA; a festival in honor of Apollo among the ancient Spartans, taking its name from the Greek name of the month (August) in which it was celebrated. The celebration lasted nine days.

CARNIFEX FERRY, in Nicholas co., Va., near which, Sept. 10, 1861, there was an engagement between the union forces under gen. Rosecrans, and the confederates under gen. Floyd, the latter being defeated with the loss of camp equipage and war material. Floyd escaped by retreating over Gauley river, and destroying the bridge.

CARNOCHAN, JOHN MURRAY, b. Georgia, 1817; educated in Edinburgh; studied medicine and surgery with Dr. Mott of New York, beginning practice in 1847. Dr. Carnochan rapidly rose to the first rank among practicing physicians and surgeons, and acquired great celebrity for the boldness and success of his operations, such as the removal of the lower jaw; the cure of elephantiasis by ligation of the femoral artery; excision of the ulna and still preserving the arm with most of its functions; amputating the hip joint; and particularly for removing, in a case of neuralgia, the entire trunk of the second branch of the fifth pair of nerves. He has been professor of the principles and operations of surgery in the New York medical college, and health officer of the port. He has published a number of important papers on medicine and surgery.

CARNUNTUM, an ancient t. in upper Pannonia, on the Danube, founded by the Celts, but at an early period a Roman post. Marcus Aurelius resided here for three years during his wars with the Marcomanni. In the 4th c. C. was destroyed by German invaders; it was afterward rebuilt, and finally destroyed in the Magyar wars of the middle ages.

CAROL, a Christmas hymn that may be traced to the primitive church. It was customary to call upon such as could sing to praise God in a hymn, either out of the Scriptures or of their own invention; and it was also customary for bishops on Christmas day to make sport with their clergy, and to sing; which custom was in imitation of the *Gloria in Excelsis* of the angels. See CHRISTMAS CAROL, *ante*.

CAROLAN, or O'CAROLAN, TURLOGH, 1670-1738; one of the most noted of native Irish bards. When but 18 years old he became utterly blind, and thenceforward followed the profession of wandering minstrel, in which character he won great fame. The number of his compositions, to the greater part of which he fitted words, was about 200.

CAROLINA, MARIA, 1752-1814; daughter of Francis I. and Maria Theresa of Austria, and queen of Naples by her marriage with Ferdinand IV. in 1768. She had great influence with the king, leading him in 1798 to declare war against France, the consequence of which was the marching of the French upon Naples and the flight of Ferdinand and Carolina to British protection. After returning to Naples she conspired against Napoleon, and, with her husband, was again expelled. She died in Vienna before any further restoration to the throne.

CAROLINE, a co. in e. Maryland, on the Delaware border, intersected by the Maryland and Delaware and the Dorchester and Delaware railroads; 300 sq.m.; pop. '70, 12,101-3,758 colored. It has a level sandy surface, producing corn, oats, potatoes, etc. Co. seat, Denton.

CAROLINE, a co. in e. Virginia, on the Rappahanock river, and the Richmond, Frederick and Potomac railroad; 480 sq.m.; pop. '70, 15,128-8,033 colored. Productions, wheat, corn, oats, and tobacco. Co. seat, Bowling Green.

CAROLINE BOOKS, four works drawn up at the request of Charlemagne against the decrees of the second council of Nice on the adoration of images, and contained in the *Capitulare Prolicium* of Charlemagne.

CAROLINE ISLANDS, or NEW PHILIPPINES, a widely scattered archipelago in the Pacific, n. of New Guinea and e. of the Philippines, between 3° and 11° n., and 135° and 137° e. The westernmost are known as the Pelew (q.v. *ante*) or Palau islands, and cover 346 sq.m. of land, being nearly encircled by a coral reef. The surface is well wooded, and the soil fertile, producing bread-fruit, cocoa-nuts, sugar-cane, oranges, bananas, etc., in abundance. Cattle, sheep, and hogs have been domesticated; there is a great variety of birds, and the lagoons abound with fish. The inhabitants are dark-colored, and evidently of Papuan and Malay blood. The islands, and most of the villages, form independent but co-operative republics. One of the most remarkable institutions is the "clöbbergall," a kind of union for mutual aid and defense. The women, too, have clöbbergalls of their own, and exercise much political influence. Up to the

close of the last century the people used stone instruments and weapons. Their currency consists of pieces, or pïeds, of ancient glass and enamel, to which they ascribe a divine origin. The population, supposed to be about 10,000, seems to be decreasing. The central islands, or Carolines proper, consist of 48 groups, and comprise between 400 and 500 islands, of about 360 sq.m. in all. The Matelotas group lies n.e. of the Pelews, and consists of three islands, thinly inhabited. Yap, or Guap, further n.e., is 10 m. long, and has a good harbor. The natives of Yap are more advanced in civilization than their neighbors; they cultivate the betel-nut with great care, build good boats, lay out regular villages, pave the streets, and build stone piers and wharves. A Spanish mission was established in 1856. The Ulea, Swede, and Lutke islands are unimportant; but the Hugoleu (or Rug) group, discovered in 1824, consists of five large and about 40 small islands, with 35,000 inhabitants of two races, red and black, who are often at war with each other. The Mortlack, or Young William's, group consists of three islands, with a population of about 3,400, of Samoan origin, who are the only idol-worshippers in all the archipelago. To the n.e. lies Ruven island, inhabited by immigrants of mixed foreign blood. The Seniavine group, comprising three islands, has a small colony of whites, and one of the islands has been the seat of an American mission since 1851. This island, called Ascencion by the French, is a rendezvous for whaling vessels. In the center is a remarkable pile of ruins which seem to have belonged to a fortification. Strong's island, in the center of the Carolines proper, is a volcanic upheaval, discovered by Crozier in 1804, and is now the seat of an American mission. The eastern Carolines, otherwise the Mulgrave archipelago, comprise the Radak or Marshall group, and have a population estimated at 100,000. See POLYNESIA, *ante*.

CAROLINE MATILDA, 1751-75; sister of George III. of England; queen of Denmark, having married Christian VII. in 1769, by whom she became the mother of Frederick VI. Through the jealousy of the queen dowager and the king's step-mother, she was accused of infidelity, and the king, who had become weak-minded, if not idiotic, caused her and Struensee, her physician, to be arrested. The interference of the British minister saved the queen from death, but she was sent into Hanover, where she died of grief in the castle of Celle. See STRUENSEE, *ante*.

CARON, RENÉ ÉDOUARD, b. Canada, 1800; a lawyer and statesman; educated in the Quebec seminary, and admitted to the bar in 1826. He was mayor of Quebec from 1827 to 1837, and again from 1848 to 1853, after which he abandoned political life and was appointed judge of the queen's bench. In 1857, he was commissioner for codifying the laws of Lower Canada, and in 1873 he was appointed lieutenant-governor of Quebec.

CARPÆA, a dance in ancient Thessaly; a pantomime represented by two men, one a robber and the other a plowman, in which there was a contest for the possession of the plowman's oxen, which are finally captured by the robber. All the action was rhythmical, and performed much like a pantomime of the present day.

CARPATHOS. See SCARPANTO, *ante*.

CARPEAUX, JEAN BAPTISTE, b. 1827; a French sculptor, whose more conspicuous works are "The Fisher Boy," "Ugolino and his Children," "Neapolitan Fisherman," "Girl with a Shell," "France enlightening the World, and protecting Agriculture and Science," and the noted group, "La Danse," on the façade of the Paris opera-house.

CARPENTER, FRANCIS B., b. 1830; a painter whose portrait of Lincoln, and "Emancipation Proclamation," have gained some celebrity. He published *Six Months in the White House*.

CARPENTER, LANT, LL.D., 1780-1840; an English Unitarian minister, successor of Dr. Kenrick at Exeter; afterwards in charge of a church in Bristol. He was much interested in the religious instruction of children, and established several Sunday-schools. Among his works are *An Introduction to the Geography of the New Testament*; *Unitarianism the Doctrine of the Gospel*; *Examination of the Charges against Unitarianism*; and *Harmony of the Gospels*.

CARPENTER, MATTHEW H., b. Vt., 1824; studied law with Rufus Choate; and in 1848 settled in Wisconsin, from which state he was returned as U. S. senator in 1868, and was re-elected in 1879. He is an able lawyer and a brilliant debater.

CARPENTER, SHIP'S, a naval officer whose duty is to keep a ship of war in repair, specially during action in case of damage that may endanger sinking.

CARPET-BAGGER, a term of contempt applied by the people of the southern United States to a man who came from any other part of the union to live in the south, or to transact business there after the close of the rebellion. The term has been extended so as to designate any person in any part of the country who has no fixed residence. One offense of the carpet-bagger in the south was in teaching negroes to read and write, and helping them to assert their new political rights, which the greater majority of native whites were in no hurry to see exercised. In the unsettled condition of the southern states after the rebellion, they furnished an inviting field for adventurers and demagogues, who gave some ground for the stigma which has largely attached to the name of carpet-bagger.

CARPI, GIROLAMO DA, 1501-56; an Italian painter who became infatuated with the works of Correggio, and so closely imitated them as to pass off his own as originals. Very probably some of these imitations are now figuring as true Correggios. Da Carpi's best works are the "Descent of the Holy Spirit," "Adoration of the Magi," and the saints Catherine, George, and Jerome, in churches at Rovigi, Bologna, and Ferrara.

CARPZOV, a Saxon family descended from Simon Carpzov, burgomaster of Brandenburg about the middle of the 16th century. He left two sons—Benedict and Simon. BENEDICT, 1565-1634, was a jurist and professor of law at Wittenberg; and in 1602, chancellor to Sophia, electress of Saxony. He died at Wittenberg, leaving five sons. JOACHIM, the eldest son of the burgomaster, reached a high position in the Danish army. BENEDICT, the second of the five, 1595-1666, was a professor at Leipsic, ordinary of the faculty of jurists at the same university, and in 1653, privy councilor at Dresden. He published several works which had much influence in the administration of justice. His later years were spent in religious study. AUGUST, 1612-83, his brother and the fourth son of the first Benedict, was distinguished as a diplomatist, was chancellor of the consistory at Coburg, and at the time of his death a privy councilor at Gotha. He was a man of piety, and the author of several devotional works. JOHANN BENEDICT, 1607-57, fifth son of the first Benedict, was professor of theology at Leipsic, and the author of a system of theology and other works of that nature. He also left five sons, all of whom obtained conspicuous reputation. One of the five was JOHANN GOTLOB, 1679-1767, who became an eminent theologian and professor of oriental languages at Leipsic. He wrote an introduction to the canonical books of the Old Testament, and a *Critica Sacra Veteris Testamenti*. JOHANN BENEDICT, grandson of the first Johann Benedict, 1720-1803, was professor of philosophy at Leipsic, and professor of poetry and Greek at Helmstadt, and professor of theology. He wrote many philological works, and ended his life as an abbot.

CARQUINEZ, or KARQUENAS, a strait in California, between Suisun and San Pablo bays, 7 m. long, navigable for steam-boats, and for large vessels as far as Benecia.

CARR, DABNEY, 1744-73; a son-in-law of Thomas Jefferson, and an eloquent member of the Virginia colonial legislature.

CARR, Sir ROBERT, d. Rhode Island, 1667; one of the English commissioners to New England, appointed by Charles II., the others being Nichols, Maverick, and Cartwright. After the capture of New Amsterdam (New York) from the Dutch in 1664 by Nichols, C. compelled the Dutch and Swedes on the Delaware to submit to a capitulation. He then went with the other commissioners to Boston, where they administered the government.

CARRAC'CI. See BOLOGNESE SCHOOL.

CARRAN'ZA, BARTOLEMÉ DE. 1503-76; a Spanish theologian of the Dominican order, a man of great learning and eloquence. Charles V. sent him as envoy to the council of Trent, where he maintained that it was the duty of priests to reside in their benefices. He accompanied the prince, afterwards Philip II., to England, where he went to settle the marriage with Mary. In England, Carranza became queen Mary's confessor, and worked hard for the re-establishment of Roman Catholicism. Philip made him archbishop of Toledo, an appointment that aroused such jealousy that Carranza was denounced as a heretic. He was kept in prison eight years, thence taken to Rome and kept in prison, being at last compelled to abjure opinions which he had never held. He was then degraded from his office and sent to a convent, where he died seven days afterwards. He was afterwards honored as a saint by the Spanish people.

CARRERA, RAFAEL, 1814-65; a Guatemalan of Indian and negro blood, who in 1837 led a band of insurgents and the next year captured the city of Guatemala. In 1839, he again held the city by force. In 1847, he was elected president of the republic, and in 1851, re-elected for life. In 1863, he made war on San Salvador, captured the capital, and expelled the president. Though almost a savage, and without education, his government on the whole was mild and reasonable.

CARRIACOU', one of the West India islands, 20 m. n.e. of Grenada; 7 m. long by 3 wide. Cotton is the chief production.

CARRICK'S FORD, on Cheat river in West Virginia, where, July 13, 1861, a confederate force under gen. R. B. Garnett was routed by a federal force under gen. T. A. Morris, and of the confederates several were killed.

CARRIERE', MORITZ, b. 1817; a German scholar, professor of philosophy at Geissen and Munich, and author of many works on philosophy, religion, aesthetics, poetry, etc. He is a pronounced liberal, going so far as to advocate the conversion of the cathedral at Cologne into a free church. He is also an art critic of high rank.

CARRIÉRES, LOUIS DE, 1662-1717; a Roman Catholic theologian of France, who published a literal commentary on the Scriptures, in which most of the comments were in the words of the Bible itself.

CARRIERS (*ante*). In the United States, common carriers are such as transport for hire for all persons indifferently. They operate both on land and water, and embrace stage-coach proprietors, railway and steamboat companies, truckmen, teamsters, express

companies, etc., including owners and masters of every kind of vessel or water-craft who come before the public as the carriers of freight of any kind for whomsoever may choose to employ them, for either a long or a short voyage. Common C. are responsible for loss or damage during transportation from whatever cause, "except the acts of God, or of the public enemy." The act of God means only such inevitable accidents as occur without man's agency. The carrier is not responsible for losses occurring from natural causes, such as fermentation, evaporation, freezing, the ordinary decay of perishable articles, or the natural wear in the course of transportation, provided he exercises reasonable care to have such dangers as little as practicable. C. who undertake general business are bound to carry all matter that offers, under liability of legal action if they refuse without just excuse; but any carrier may restrict his business to certain goods, in which case he is not bound to accept things out of his line. A carrier may require payment of freight in advance; and he is entitled to a lien upon the goods for his freight and for what he advances to other carriers. But all common-law responsibility may be qualified by special contracts. The bill of lading, or receipt for the goods, is an acknowledgment of the carrier's responsibility, and is presumed to name exceptions from responsibility if any there be. Railway companies, steamboat owners, and other C. who allow express companies to carry parcels and packages on their cars, boats, or other vehicles, are liable as common C. to the owners of the goods for loss or damage without regard to the contract between them and such express carriers. Railways, steamers, etc., carrying passengers, although not liable for injury to passengers without the C.'s fault, are responsible for the baggage of such passengers intrusted to them as common C., and the responsibility continues until the delivery of the baggage to the owner, or to his order. The baggage-check is the same as a bill of lading for goods, and is evidence of the responsibility assumed. Jewelry and a watch in a trunk are considered baggage, but money, beyond a reasonable amount for expenses, is not so considered. The responsibility of C. begins upon the delivery of the goods for immediate transportation. A delivery at the usual place of receiving freight, or to those employed by the company in the usual course of business, is sufficient. But where C. have a house at which they receive goods that are not to be forwarded until further order or a later time, such C. are in the mean time responsible only as depositaries; and where goods are received as by wharfingers, or warehousemen, or forwarders, and not as C., liabilities are incurred only for ordinary negligence. The responsibility of the carrier terminates when, after the arrival of the goods at their destination, a sufficient time has elapsed for the owner to receive them in business hours. After that the carrier may store them, and is responsible only for ordinary care. The agents of corporations which are common C., such as railway and steamboat companies, bind their principals to the full extent of the business intrusted to their control, whether they follow their instructions or not; nor will it excuse the company to show that the agents acted willfully in disregard of instructions. The carrier has an insurable interest in the goods both in regard to fire and marine disaster, except such as result from inevitable accident, such as fire by lightning-stroke. If a particular time is set for the delivery of goods, damages may be recovered for exceeding that time. The carrier is liable upon general principles where the goods are delivered through his default, to the extent of their value at the place of destination; and this includes the profits of the adventure. If the goods are only damaged, or not delivered in time, the owner is bound to receive them. He will be entitled to damages, but he cannot repudiate the goods and recover for the total loss.

CARRIERS OF PASSENGERS. (See *CARRIERS, ante*.) Persons who carry passengers are not held responsible as insurers of the safety of their freight as carriers of goods are held. But they are held to the highest degree of watchfulness and care in all the conduct of their business. So far as human foresight and prudence can secure the passenger from harm, there is a right to demand it of all who assume the transportation of persons. It is a practice to print on passes or free tickets a notice that such a passenger assumes the risk of personal injury, but the courts have again and again decided that this in no degree lessens the carrier's liability, holding even that the transporting party was as much responsible for a non-paying as for a paying passenger. Passenger-carriers are responsible for the baggage of their passengers, and for the safety of parcels intrusted to them or their agents. Many decisions of American courts touch various points in the case of passengers, but all sustain the principle that if anything more could have been done by the carrier to insure the safety of his passengers, and injury occur in consequence of the omission, he is liable. Passenger-carriers are not responsible where the injury occurs through the negligence of the passenger; but when there is intentional wrong on the part of the carrier, the injured party may recover notwithstanding his negligence. And so also, where the carrier's negligence contributed only remotely to the injury and the passenger's culpable want of care was its immediate cause, a recovery may still be had. Passengers leaping from a conveyance in consequence of any just sense of peril may recover for injury. Carriers are bound to carry for the whole route for which they stipulate, and according to their public notices and the general customs of their business; but they are not bound to carry persons disorderly in conduct, or those having contagious diseases, or who are in any way dangerous or offensive to other passengers. The carrier is liable for damages if he fail to deliver the

passenger in a reasonable time, or according to the published schedule. The sale of through tickets for a route operated by several successive companies of carriers having no partnership connection, renders each company liable for injuries to passengers occurring only in the part of the route which pertains to it severally. One decision in case of the death of a passenger was that the jury are to estimate damages for the death as they would for an injury to health, by the probable financial accumulations of the deceased had he survived, or not been injured through the culpable negligence of the carrier; therefore he or his estate is entitled to recover not only the damages sustained up to the time of trial, but all prospective damages likely to accrue from the injury. Passengers must conform to the rules of the road or company with regard to purchasing, showing, and giving up tickets, and in respect to trains and cars. But it has been held that when one purchased a ticket indorsed "good for this trip only," and was unexpectedly detained, he could lawfully demand transportation by another train, even on the next day. Railway companies may exclude merchandise and articles known as "express" matter from the passenger cars. When an accident occurs to a train, or a stage-coach is overturned, the fact is considered *prima facie* evidence of fault on the part of the company or its agents. With regard to steam and other vessels, very strict rules are enacted by governments for the safety of passengers and property, regulating the number of passengers, the amount of provisions, the navigating of the ship, pilotage, etc.

CARRO', JEAN DE, 1770-1857; b. Geneva; a German physician in Vienna and Carlsbad, noted for his advocacy of Jenner's system of vaccination as a guard against small-pox. Through his efforts, kine-pox inoculation was introduced into India, where the people, hearing that the vaccine matter came from a cow, ascribed its origin to their sacred cow, and called it by a name meaning "immortality." Carro wrote several works on medical subjects.

CARROLL, a co. in n.w. Arkansas, on the Missouri border, and King and White rivers; 700 sq.m.; pop. '70, 5,780-37 colored. Surface varied, and soil generally fertile. There are quarries of excellent yellow marble. Co. seat, Carrollton.

CARROLL, a co. in w. Georgia, on the Alabama border, and the Chattahoochee and Tallapoosa rivers; 572 sq.m.; pop. '70, 11,782-1,309 colored. The surface is mostly mountainous; but the soil is generally fertile, producing corn, wheat, cotton, etc. One or two gold-mines have been profitably worked. Co. seat, Carrollton.

CARROLL, a co. in n.w. Illinois, on the Mississippi river, and crossed by the Western Union railroad; 416 sq.m.; pop. '70, 16,705. The surface is uneven, occupied by prairie and forest, and the main products are cereals, butter, and wool. Co. seat, Savannah.

CARROLL, a co. in n.w. Indiana, on the Wabash and Tippecanoe rivers, traversed by the Toledo, Wabash and Western railroad, and the Wabash and Erie canal; 573 sq.m.; pop. '70, 16,152. It has a diversified and well-timbered surface, and productive soil, agriculture being the chief business. Co. seat, Delphi.

CARROLL, a co. in central Iowa, on the Chicago and Northwestern railroad, drained by the North and Middle Raccoon rivers; 600 sq.m.; pop. '70, 2,451. The climate is good and the soil fertile. Co. seat, Carrollton.

CARROLL, a co. in n. Kentucky, on the Ohio and Kentucky rivers, and Louisville, Cincinnati and Lexington railroad; 200 sq.m.; pop. '70, 6,189-540 colored. It has a calcareous soil, with abundance of limestone. Productions chiefly agricultural. Co. seat, Carrollton.

CARROLL, a parish in n.e. Louisiana, on the Mississippi river and bayou Boeuf; 1050 sq.m.; pop. '70, 10,110-7,718 colored. It has a level surface, producing corn and cotton. Seat of justice, Providence.

CARROLL, a co. in n. Maryland, on the Pennsylvania border and the Patapsco and Monocacy rivers, reached by the Baltimore and Ohio, and crossed by the Western Maryland railroad; 500 sq.m.; pop. '70, 28,619-2,175 colored. It has a hilly surface, and rather thin but well cultivated soil; its productions are wheat, corn, butter, tobacco, etc. Co. seat, Westminster.

CARROLL, a co. in w. Mississippi, on the Yalabusha, Yazoo, and Big Black rivers, and crossed by the Mississippi Central railroad; 900 sq.m.; pop. '70, 21,057-11,550 colored. The surface is level, and the soil is remarkably fertile; chief productions, corn and cotton. Co. seat, Carrollton.

CARROLL, a co. in n.w. Missouri, between the Missouri and Grand rivers, traversed by a branch of the North Missouri railroad; 700 sq.m.; pop. '70, 17,446-827 colored. It has an uneven surface, in many parts covered with black walnut and oak forests; its soil is generally productive. Chief business, agriculture. Co. seat, Carrollton.

CARROLL, a co. in n.e. New Hampshire, on the Maine border and Winnepesaukee lake, reached by the Portland and Ogdensburg, and the Portsmouth, Great Falls and Conway railroads. The surface is mostly mountainous; productions chiefly agricultural. Co. seat, Ossipee.

CARROLL, a co. in e. Ohio, traversed by the Tuscarawas branch of the Cleveland and Pittsburg, and the Carrollton and Oneida railroads; 330 sq.m.; pop. '79, 14,491. It is hilly, but well-watered and fertile. Iron and coal are found. The chief productions are grain, hay, butter, and wool. Co. seat, Carrollton.

CARROLL, a co. in n. Tennessee, on the Big Sandy and Obion rivers, and the Louisville and Memphis, and the Nashville and Northwestern railroads; 625 sq.m.; pop. '70, 19,447—4,799 colored. It is level and fertile, with forests of black walnut, hickory, maple, and oak. Chief productions, corn, wheat, cotton, and butter. Co. seat, Huntingdon.

CARROLL, a co. in s.w. Virginia, on the North Carolina border, drained by the Kanawha river; 440 sq.m.; pop. '70, 9,147—328 colored. The surface is rough, but well adapted to grazing. Copper, iron, and lead are found. The Grayson sulphur springs are much visited. Productions chiefly agricultural. Co. seat, Hillsville.

CARROLL, CHARLES, OF CARROLLTON, b. Md., Sept. 20, 1737; d. Nov. 14, 1832, aged 95 years; the last survivor of the fifty signers of the declaration of American independence. He was educated in the Jesuit colleges of St. Omer and Rheims; studied law at Bourges, Paris, and London, returning to America in 1764. He inherited the last and the largest of the old manorial estates of Maryland, a property estimated in 1775 at \$2,000,000, and he was then considered the wealthiest private citizen in the colonies. In 1775, he was chosen a member of the "committee of observation" at Annapolis, and in the same year sent to the provincial convention. In 1776, he was one of the commissioners sent to persuade the Canadians to join in the revolt against England. Returning to Maryland, he was prominent in bringing the colonial delegates to agree upon union for independence; and July 4, 1776, he was sent to congress, where, Aug. 2, he signed the declaration. At the time of signing, a delegate, alluding to Carroll's great wealth, remarked, "There goes a few millions; but there are many Charles Carrolls, and the British will not know which one it is;" whereupon Carroll immediately added after his name of *Carrollton*, an addition that was ever afterward respected. In congress, he was one of the board of war. About the close of 1776, he was one of the committee that drafted the Maryland constitution, and was chosen to the senate of that state. In 1777, he was again sent to congress, and in subsequent years was repeatedly elected to the state legislature. In 1789, he was United States senator; in 1799, one of the Maryland and Virginia boundary commission. July 4, 1821, but four of the signers of the declaration were living: Carroll, William Floyd of New York, and ex-presidents Adams and Jefferson. Floyd died in the next month, and Adams and Jefferson both died July 4, 1826, leaving Carroll the sole survivor. His last public act was the laying of the corner-stone of the Baltimore and Ohio railroad, July 4, 1828, when in his 90th year. Carroll's grand-daughter, Miss Caton (d. 1853), was the Marchioness of Wellesley.

CARROLL, JOHN, D.D., LL.D., 1735-1815; cousin of Charles Carroll of Carrollton: an American Roman Catholic prelate, educated in Europe, and for a time professor at Bruges. Returning to America, he was selected, with his cousin and Dr. Franklin, to go to Canada to urge the people to join the colonies in their effort for freedom. After the revolution, C. was appointed vicar-general, and in 1789, was promoted to bishop, being the first bishop of the Roman Catholic church in the United States. A short time before his death he was made archbishop.

CARROLLTON, a city in Green co., Ill., 34 m. n.w. of Alton, on the Jacksonville and Alton railroad; pop. 2,700. Its trade is in lumber, agricultural products, and coal.

CARROLTON, a city in Louisiana, on the Mississippi, 7 m. above New Orleans, in Jefferson parish; pop. 6,495. Its trade is chiefly in sugar and molasses. Horse railroads connect with New Orleans.

CARSON, ALEXANDER, LL.D., 1776-1844; an Independent or Congregational preacher of the n. of Ireland, officiating at Tubbermore for 30 years, within which time he became a Baptist and an earnest advocate of their views.

CARSON, CHRISTOPHER, or "Kit Carson," b. Ky., 1809, d. Col., 1868; one of the most famous pioneers and scouts of the west. When about 24 years old he was appointed hunter to Bent's fort, where he remained eight years; he was then engaged as a pioneer in Fremont's explorations among the Rocky mountains. In 1847, he was made lieutenant in a rifle corps of the regular army. In 1853, he drove 6,500 sheep over the plains and mountains to California. He was afterward Indian agent in New Mexico, and was instrumental in making a number of treaties of importance. In the civil war he did good service on the borders, and was brevetted brig.gen. The remarkable adventures of "Kit Carson" often surpass the most extravagant romance, though the most daring of them are literally true. Personally he was as modest as he was brave.

CARSON CITY, the capital of Nevada, in Eagle valley, Ormsby co., 4 m. from Carson river, 178 m. n.e. of San Francisco, on the Virginia and Truckee railroad. It is in a picturesque region near the base of the Sierra Nevada, and only about 10 m. from lake Tahoe. There is a branch mint in Carson City which receives immense deposits of silver and gold ore. There are a state-house, several churches and schools,

and many mining and manufacturing establishments. Pop. '70, 3,042. The state prison is 2 m. n.e. of the city.

CARSON RIVER, a stream in Nevada, rising in the Sierra Nevada, passing n. near Carson City and Lyon, and emptying into Carson lake, a body of water about 15 miles long, that appears to have no outlet.

CARTA'GO, a city in the state of Cauca, United States of Colombia, 130 m. n.w. of Bogota. It is in a salubrious and well cultivated region, and has a considerable trade in cotton, fruits, coffee, cocoa, and tobacco. Pop. 8,000.

CARTER, a co. in n.e. Kentucky, on Little Sandy river; 500 sq.m.; pop. '70, 7,509—100 colored. It has a rough surface, but near the streams the soil is good. The main business is agriculture. Co. seat, Grayson.

CARTER, a co. in s.e. Missouri, on Current river; 500 sq.m.; pop. '70, 1453. The surface is hilly and well wooded; productions, grain and tobacco. Copper and iron are found. Co. seat, Van Buren.

CARTER, a co. in n.e. Tennessee, on the North Carolina border, in the highest part of the state, watered by the Wautauga, Doe, and affluents of Holston rivers; 350 sq m.; pop. '70, 7,909—573 colored. A branch of the East Tennessee, Virginia, and Georgia railroad traverses the county. There are rich iron mines, but agriculture is the chief business. Co. seat, Elizabethtown.

CARTERET, a co. in e. North Carolina, on Pamlico sound and the Atlantic ocean, traversed by the Atlantic and North Carolina railroad; 450 sq.m.; pop. '70, 9,010—2,725 colored. Much of the surface is occupied by swamps and pine forests. Productions mainly agricultural. Co. seat, Beaufort.

CARTERET, PHILIP, an English naval officer who commanded the *Swallow* on a voyage of discovery in the South seas in 1766-67. He was gone 2½ years, and made some discoveries, among them an island to which he gave his name.

CARTE'SIAN PHILOSOPHY. See DESCARTES, *ante*.

CARTHAGE, a city in s.w. Missouri, in the lead regions, on the line of the Memphis, Carthage and Northwest railroad, 220 m. s.w. of Jefferson City; pop. about 300. On July 5, 1861, a force of confederates under gen. Jackson and gen. Price, consisting of about 3,500 men, while retreating from the main army of gen. Lyon, were, at a point about 7 m. e. of Carthage, confronted by gen. Sigel with about 1500 union troops. Gen. Sigel, being superior in artillery, gave battle, which continued several hours with much loss to the confederates, when, to prevent the confederate cavalry from outflanking him and to protect his baggage train, gen. Sigel fell back in good order, and continued his retreat to Carthage and Sarcoxie, 15 miles to the east. The union loss was 50 in killed and wounded, that of the confederates was reported to be 50 killed and about 150 wounded.

CARTHAGENA (*ante*), a fortified seaport of the United States of Colombia, founded by the Spaniards, 1508. The city is noted for its fortifications, convent buildings, and fine harbor. The walls and defenses were completed in 1717, at a cost of \$59,000,000. In 1585, C. was sacked by the English under sir Francis Drake, and in 1741, besieged by the fleet of admiral Vernon. In 1860, gen. Mosquera abolished the convent system, allowing priests and nuns but 48 hours to leave the city. The climate is dry and hot, but salubrious, although C. has been ravaged at intervals by yellow fever. There is a small export of caoutchouc, tobacco, hides, and other interior products. The population, which in 1800 was about 25,000, is now reduced to 3,000.

CARTHAGO NOVA. See CARTAGENA, *ante*.

CARTIER, Sir GEORGE ÉTIENNE, 1814-73; a lawyer of Canada, educated at St. Sulpice, Montreal. He was one of the Papineau "rebels" in the abortive revolution of 1837-38, but was forgiven; and became a member of the provincial legislature, secretary, and attorney-general. In 1858, he became premier. He was instrumental in abolishing feudal tenure in Lower Canada, in making the legislative council elective, in codifying the laws, in decentralizing the judiciary, and in bringing about the confederation of the colonies.

CARTIER, JACQUES, b. 1494, in Brittany. In 1534, he sailed from St. Malo in command of two ships to explore the n.e. coast of America. He touched at cape Buenavista, Newfoundland, passed up the straits of Belle Isle and discovered the mainland of Canada, which he claimed for France. The next year, with another expedition, he sailed up the St. Lawrence as far as Hochelaga, a large fortified native village at the foot of a hill, which he named Mont Royal (now Montreal). Disgusted with the severe climate, and his men being sick with scurvy, he went back to France in 1536, and nothing was done towards colonization until 1540, when Jean Francis de la Roche, sieur de Roberval, obtained leave to form a settlement. In 1541, Cartier was sent out in command of five ships, and near the present Quebec he built a fort and named it Charlesbourg; but the Indians, whose chief he had carried off in his previous voyage, gave him so much trouble that he returned to France. Cartier appears no more in public life except as seigneur of his native village of Limoilin, where he was living as late as 1552.

CARTOUCHE, LOUIS DOMINIQUE, 1693-1721; the leader of a band of robbers and assassins in France, whose crimes created great terror in Paris. For many years he eluded the police, but at last was arrested by chance in a low drinking-house. He had a long trial, which created a great deal of interest, and was finally sentenced to death, and broken on the wheel before an immense assembly of approving spectators.

CARTWRIGHT, JOHN, 1740-1824; usually called maj. C.; in the English navy in his youth. He was present at the capture of Cherbourg, and subsequently on the Newfoundland station, when he was appointed chief magistrate of the settlement, discharging the duties of the office with great ability for five years. When the dispute with the American colonies began, he espoused their cause, declining to fight against them, and thereby rejecting an almost certain high military or naval promotion. In 1774, he published *American Independence the Glory and Interest of Great Britain*. The next year he was appointed maj. in the Nottingham militia, which position he served for 17 years, being finally superseded because of his political opinions. In 1776, he appeared in print as the advocate of parliamentary reform, and thenceforth devoted his life to the attainment of universal suffrage and annual parliaments. In 1778, he was an unsuccessful candidate for Nottinghamshire, and the same year founded the "society for constitutional information," a body which embraced many of the distinguished men of the day, and from which organization rose the famous "corresponding society." His work in the furtherance of reform was incessant. In 1819, he was indicted for conspiracy, found guilty the following year, and sentenced to pay a fine of £100. He spent his last years in London. He was married, but left no children. In 1831, a monument to him was erected on Burton Crescent.

CARTWRIGHT, PETER, D.D., 1785-1872; a native of Virginia; settled in early life in Kentucky, where, in 1806, he was ordained a deacon in the Methodist Episcopal church. He was subsequently regular preacher and presiding elder, and a member of every quadrennial conference from 1816 to 1860, and once more in 1868. He was a zealous worker, in the course of 33 years preaching about 15,000 sermons, and baptizing 12,000 converts. C. was widely known for his homely but powerful preaching; and interesting stories are told of his daring and romantic adventures among the rough backwoodsmen. Many of these can be found in his *Fifty Years a Presiding Elder*, and in the *Autobiography of Peter Cartwright, the Backwoods Preacher*.

CARTWRIGHT, SAMUEL A., b. Va., 1793; d. about 1863. He studied medicine under Dr. Rush and graduated at Pennsylvania college. During Jackson's campaigns against the Indians and the British he was surgeon-in-chief, and, after 1815, settled in Alabama and afterward in Natchez, Miss., where he labored for a quarter of a century. Dr. C. wrote many valuable papers upon fevers, cholera, and other diseases.

CARUS, MARCUS AURELIUS, 222-83; Emperor of Rome; supposed to have been the son of a noble Roman lady and an African father. On the assassination of Probus in 282, C. was proclaimed emperor by the legions. He was victorious over the Sarmatians, and in a winter campaign in Asia, he carried his arms beyond the Tigris. He died very suddenly in camp, and it was given out that he had been struck with lightning.

CARVAJAL, or CARBAJAL, TOMAS JOSÉ GONSALEZ, 1753-1834; poet and statesman of Spain; educated at Seville. He held a number of offices of importance, and in 1812, became director of the university of San Isidore, where, by establishing a chair of international law he offended the government, and was imprisoned for 5 years. He was reinstated by the revolution of 1820, but forced into exile by the counter-revolution 3 years later. He died a member of the supreme council of war. C. obtained celebrity as the author of metrical translations of the poetical books of the Bible, and for other works in prose and verse.

CARVALHO E MELLO. See **POMBAL**, *ante*.

CARVER, a co. in s.e. Minnesota, on the Minnesota and Crow rivers; 375 sq.m.; pop. '70, 11,586. Surface undulating, and soil fertile; productions chiefly agricultural. One or two railroads are in operation or in progress. Co. seat, Chaska.

CARVER, JOHN, b. England, d. Massachusetts, 1621. He left England on account of religious intolerance, and settled in Leyden, whence he was sent to effect certain arrangements with the Virginia company. In 1619, he got a patent, and sailed in the *Mayflower* with 101 colonists. On the landing at Plymouth, Carver was chosen as governor, and managed affairs prudently for the four months between his election and his death.

CARVER, JONATHAN, 1732-80; a native of Connecticut; began the study of medicine, but became a soldier, and served in the colonial wars previous to the revolution. After the peace of 1763, and the cession of the Canadas to Great Britain, Carver traveled extensively in the northwestern wilderness, for the purpose of finding new openings for trade, going to England to announce his discoveries. In 1778, he published *Travels through the Interior Parts of North America*, and the next year a treatise on the culture of tobacco. He died in extreme destitution.

CARY, ALICE, b. near Cincinnati, O., 1820, d. N. Y., 1871. At the age of 18, she began to write for the press, and at the age of 30, with the assistance of her sister

Phœbe, she published a volume of verses which were exceptionally popular. In 1851, the sisters removed to New York city, where, under the friendship and patronage of Horace Greeley, they led successful literary and social lives for 20 years. Among the works of Alice, besides many poems, are *Clovernook*; *Hagar, a Story of To-Day*; *Married, not Mated*; *Pictures of Country Life*; *Snow Berries*; *The Bishop's Son*; *The Lover's Diary*, etc.

CARY, ARCHIBALD, 1730-86; a Virginian, conspicuous on the patriot side of the revolution, his services being mainly in the Virginia convention and house of burgesses. When the state government was organized he was chosen president of the senate. The story is told of him that, on hearing a report that Patrick Henry was spoken of for dictator, he said to Henry's half-brother, "I am told that your brother wishes to be dictator. Tell him from me that the day of his appointment shall be the day of his death, for he shall find my dagger in his heart before the sunset of that day." Patrick Henry was the last man in the world to aspire to a dictatorship.

CARY, LOTT, b. a slave in Virginia in 1780, d. in Monrovia, Africa, 1828. Early in life he became a zealous Baptist; redeemed himself and two children from slavery, and in 1821 went to Liberia, where he was concerned in removing the colonists from the unhealthy locality first chosen for their settlement. He did much to advance the welfare of the new republic, and was left in full power when, in 1826, Mr. Ashmun sailed for the United States.

CARY, PHŒBE, 1824-71; sister of Alice, also a poetical and prose writer. Most of her works were issued with those of Alice. She d. at Newport, R. I., three months after the death of her sister, with whom she was a life-long companion. Neither of them were ever married.

CARYL, JOSEPH, 1602-73; a non-conformist clergyman, a native of London, educated at Oxford. By order of Cromwell, he attended Charles I. in Holmby house, and in 1650, he was sent with Owen to accompany Cromwell to Scotland. He is remembered for a ponderous commentary on the book of Job, in which, after the fashion of his time, he enlarges on every verse, and almost on every word.

CARYSFORT REEF, off the s.e. coast of Florida, in 25° 13' n., and 80° 13' west. There is a light 106 ft. above tide. Navigation is dangerous on account of the proximity of the gulf stream.

CASA, the prefix to many names in Italian and Spanish, signifying "house" or "home."

CASABIANCA, LOUIS, 1755-98; b. at Bastia; an officer in the French navy, and at a later period a member of the national convention; later still one of the council of 500; and finally capt. of *L'Orient*, flag-ship of the fleet that transported Bonaparte and his army to Egypt. In the battle of Aboukir, when the fleet was attacked by the English, Casabianca fought to the last; and, with his son 10 years old, was killed in the blowing up of the vessel.

CASAS GRANDES (the "great houses"), a t. in Chihuahua, Mexico, 150 m. n.w. of the city of Chihuahua, celebrated for the ruins of early Mexican buildings still to be seen. These ruined houses are built of sun-dried bricks of mud and gravel, each brick about 22 in. thick and 3 ft. in length. The walls, which are in some places 5 ft. thick, seem to have been plastered both outside and inside. The main edifice, about 800 by 200 ft. in extent, is rectangular, and appears to have consisted of three separate piles united by galleries or lines of lower buildings, and the ruins indicate a height for the main staircase of six or seven stories. In the same vicinity are artificial mounds from which have been excavated stone axes, corn-grinders, and various other utensils. Similar ruins are found near the Gila, the Salinas, and the Colorado rivers.

CASCA, PUBLIUS SERVILIUS, the one among the assassins of Julius Cæsar who, according to Plutarch, struck the first blow. This was done across the back of Cæsar's neck with a short sword, but the wound was not deadly, and the finishing of the work was left to Brutus and the others.

CASCADE RANGE, in Oregon and Washington territory; a mountain chain forming a continuation of the California coast range. The mountains are about 100 m. e. from the Pacific, and the more conspicuous peaks are Mts. Baker, Jefferson, Wood, Pitt, and Ranier, the latter the highest point—14,444 ft. above tide.

CASCO BAY, an indentation of the s.w. coast of Maine, about 20 m. wide n.e. of cape Elizabeth, near Portland. The bay contains hundreds of small islands which are much resorted to in the summer by pleasure-seekers.

CASE, AUGUSTUS LUDLOW, b. 1812; midshipman in the U.S. navy, in 1828, rising to be captain in 1863, and rear-admiral in 1872. He served in the Mexican war and in the war of the rebellion, in the latter participating in the capture of fort Hatteras and Clarke. In 1867, he was light-house inspector, and in 1869 chief of the bureau of ordnance. In June, 1873, he was named for the command of the European squadron.

CASE, WILLIAM, 1784-1855; b. Mass.; a Methodist minister in the New York conference, and for 18 years presiding elder in the western and central part of the state of

New York and in Canada. He was superintendent of Indian missions and schools in Canada until his death, and had also the chief direction of the Methodist ministry in that country.

CASEY, a co. in central Kentucky, on Green and Salt rivers; 350 sq.m.; pop. '70, 8,884—544 colored. It has a rough surface and produces grain, tobacco, butter, and wool. Co. seat, Liberty.

CASEY, SILAS, b. R. I., 1807; a West Point graduate in 1826; in the Florida war in 1837-41, and made capt.; served in the Mexican war, and was wounded at Chapultepec; served in the war of the rebellion at Fair Oaks and in other engagements, and was retired with the rank of brevet brig.gen. He is the author of a *System of Infantry Tactics*, and *Infantry Tactics for Colored Troops*.

CASIMIR I. (see CASIMIR), called "the peaceful," son of the Polish king, Miecislus II., and a German princess named Rixa. The mother endeavored to rule during C.'s minority, but was compelled to fly to Germany, her son following her and leaving Poland in anarchy. In 1040, C. was called upon by his country, and, with the help of the German emperor, established his authority, drove out the plundering Bohemians, and earned the name of "the restorer." He left a moderately well organized government to his successor.

CASIMIR II., surnamed "the just," 1138-94; one of the four sons of Boleslas, king of Poland, and ruler over the reunited kingdom after the expulsion of Miecislus III. in 1177. Under C. II. the first Polish senate was organized, and laws were enacted defending the peasants against the oppression of the nobles.

CASIMIR IV., 1427-92; brother and successor, as king of Poland, of Ladislas III. He reigned 48 years; waged successful wars against the Teutonic knights; kept his country for most of the time in peace and prosperity; and introduced Latin into schools and official business. Of his six sons, three succeeded each other on the throne, one became king of Hungary and Bohemia, one was a cardinal, and one was canonized as a saint.

CASS, a co. in n.e. Dakota, organized since the census of 1870, on the Red river of the north. The surface is of river valleys and undulating prairie; and the soil is generally fertile. Co. seat, Fargo.

CASS, a co. in w. Illinois, on the Illinois river, intersected by three railroads; 350 sq.m.; pop. '70, 11,580. The surface is level prairie and woodland; and the soil is very fertile, producing corn, wheat, oats, etc. There are also a number of manufactories of flour, lumber, paper, and carriages. Co. seat, Beardstown.

CASS, a co. in n.w. Indiana, on Wabash and Eel rivers, traversed by the Wabash and Erie canal and two or three railroads; 420 sq.m.; pop. '70, 24,193. With the exception of bluffs near the rivers, the surface is mostly level prairie and forest, producing cereals, butter, wool, etc. Co. seat, Logansport.

CASS, a co. in s.w. Iowa, on the tributaries of Nodaway river, and intersected by the Chicago, Rock Island and Pacific railroad; 576 sq.m.; pop. '70, 5,464. It is in an agricultural region. Co. seat, Lewis.

CASS, a co. in s.w. Michigan, on the Indiana border, traversed by the Lake Shore and Michigan Southern, the Peninsular, and the Michigan Central railroads; 528 sq.m.; pop. '70, 21,094. The surface is level prairie, with oak openings, and dense forests. Iron and limestone are found. Other productions are mainly agricultural, and there is considerable manufacturing business. Co. seat, Cassopolis.

CASS, a large co. in n. central Minnesota, nearly surrounded by the Mississippi river; 4,750 sq.m.; pop. '70, 380. There are numerous streams and a great number of large and small lakes, one of which (Itasca) is the source of the Mississippi. The Northern Pacific railroad will probably pass through the s. part of the county.

CASS, a co. in w. Missouri, on a branch of Osage river, and in part crossed by the Pacific railroad of Missouri; 1000 sq.m.; pop. '70, 19,206—502 colored. Surface mostly prairie; productions agricultural. Co. seat, Harrisonville.

CASS, a co. in s.e. Nebraska, on the Platte and Missouri rivers, intersected by the Burlington and Missouri River railroad; 570 sq.m.; pop. '70, 8,151. The surface is chiefly prairie, well watered and fertile; productions agricultural. Co. seat, Plattsmouth.

CASS, a co. (formerly DAVIS) in n.e. Texas, on the Arkansas and Louisiana border, bounded n. by Sulphur fork, a tributary of Red river; 927 sq.m.; pop. '70, 8,875—3,379 colored. It has a heavily wooded and fertile soil, producing cotton, rice, corn, etc. Co. seat, Linden.

CASSABA, or CASABA, a t. in Asia Minor, 63 m. e. of Smyrna, with which it is connected by a railroad. C. has a flourishing trade with the surrounding district. Cotton is one of the chief articles of trade, and silk-worms are raised for export. Another valuable industry is the raising of melons for the Constantinople market. In 1865, a large portion of the town was destroyed by fire, and in the same year there were many deaths from cholera. Pop. about 15,000, two thirds of whom are Turks.

CASSAGNAC. See GRANIER DE CASSAGNAC, *ante*.

CASSAN'DER, GEORGE, 1515-66; a native of Zeeland; professor of classics at Bruges and Ghent; spent most of his life in trying to effect a union between the Roman Catholic and Protestant churches; to which end he published several works, which had the distinction of being both fiercely attacked by Calvin and pointedly denounced by the council of Trent.

CAS'SEL, PAULUS STEPHANUS SELIG, b. 1827; a German author of Jewish descent; educated both in Roman Catholic and Protestant schools; finished his studies under Ranke in Berlin, and became a journalist. He was in the Prussian chamber of deputies, 1866-67, and declined re-election, preferring to become minister of Christ church, Berlin. He has published articles and books on the Jews, and on religion and politics; and is well known as a lecturer on papal history, the German war, etc.

CASSIN, JOHN, 1813-69; b. Penn.; except a few years in business, he devoted most of his life to ornithology, and published many works thereon, among which are *Birds of California*; *American Ornithology*; *Mammalogy and Ornithology of the U. S. Exploring Expedition*; *Ornithology of the Japan Exploring Expedition*; *Ornithology of Gilliss's Astronomical Expedition to Chili*; a portion of the *Ornithology of the Pacific Railroad Explorations and Surveys*; and the ornithology of the *Iconographic Encyclopædia*. He was grand nephew of commodore John Cassin, and nephew of commodore Stephen Cassin, both of the U. S. navy.

CASSINO, a game at cards played by two or more persons. Four cards are dealt, one at a time, to each player, and four are turned face up on the table. After the hands are played the greatest number of cards counts the holder three, the greatest number of spades one, big C. (the ten of diamonds) two, little C. (the deuce of spades) one, and each ace one, so that nine can be possibly counted by one person; the whole game is 21. The play is to take from the table as many cards as possible, preferring spades, or aces, or big or little Cassino. The cards are taken by the number of their spots; thus a ten will take a ten, or a nine and an ace, or four aces and a six, or any combination of spots that make just ten. Another part of the game is "building;" for example, a player puts a four on a six to make up ten, meaning to take both when it again comes his turn; but any one having a ten may take them before him; or if he builds a six, the next player may make it a nine, and the next still may put on an ace and call it ten; but in building, the one who makes any particular number must hold the card that will take it. Some persons make a progressive build; that is, if one has a nine and cannot at the time make a nine, he puts a four on a two and calls it six, having of course a three to make nine when it is next his turn to play. But this kind of building is generally ruled out as irregular. A modern variation of the game is now common, in which the knave counts eleven, the queen twelve, the king thirteen, the ace one or fourteen as the players may choose, and the "joker" fifteen. This plan greatly enlarges the number of combinations, and makes the game more intricate; as, for instance, an ace may possibly take three other aces, four deuces, and a tray, making fourteen spots; or the ace may take the big and little C. and two aces, which would make six points in the game.

CASSIS. See HELMET SHELL, *ante*.

CASSITERITE, the common ore of tin, the only source of the metal; found in Banca (an island in the Malay archipelago), in Cornwall (England), Spain, Sweden, France, California, and Chili. It consists of 78.38 tin, and 21.62 oxygen; it is found in mass, in fibres, in rolled flakes, and in grains.

CASSIUS PARMENSIS, or CAIUS CASSIUS SEVERUS, one of the conspirators against the life of Julius Cæsar. He was an adherent of his namesake Cassius, and fought on his side until their defeat at Philippi. Afterwards he adhered to Pompey, and finally supported Anthony until the defeat at Actium. He went to Athens, but was arrested and executed by order of Augustus. He made some pretensions to poetry, but he was not the Cassius alluded to by Horace as noted for the abundance and the poverty of his compositions.

CASTAGN'O, ANDREA DEL, 1390-1457; a painter of the Florentine school, who imitated the naturalists of the time in boldness of attitude, but was deficient in grace and coloring. For several centuries, C. rested under the imputation of having murdered his colleague, Domenico Veneziano, in order to monopolize the then recent secret of oil painting as practiced in Flanders by the Van Eycks; but the charge has been proved untrue, as Domenico outlived C. by four years. One of C.'s extant works is an equestrian figure in the Florentine cathedral.

CASTA'NEA. See CHESTNUT, *ante*.

CASTELAR', EMILIO, b. 1832; an author, statesman, and president of the Spanish republic. He was the son of a broker, and at the death of his father was left in poverty, but managed to secure a good education. He came before the public as a writer of novels, more prominently as an advanced liberal in politics. In 1856, he obtained the professorship of history in the university of Madrid, but lost the place in 1864, in consequence of joining Carrasen in the establishment of *La Democracia*, a radical journal.

The paper was suppressed in 1866, and C. was sentenced to death for participation in the disturbance of June in that year; but he escaped to Switzerland, and subsequently went to France. At the beginning of the revolution in 1868 he went back to Spain and resumed his professorship, and in 1869 was one of the few republicans returned to the cortes. In that body he advocated republicanism and vigorously opposed the prospect of a regency. In the government chosen by the cortes after the abdication of Amadeo, C. was made minister of foreign affairs. In Aug., 1873, he was elected president of the cortes, but vacated the post when, Sept. 6, he was nominated for president of the executive power. His first act was to prorogue the cortes and assume complete authority. He made energetic but ineffectual efforts to suppress the Carlists, and sent the minister of war to Cuba, in person to protect Spanish interests in that island. When the cortes re-assembled, Jan. 2, 1874, a vote of confidence in president C. was defeated, and he at once resigned. Thereupon, Pavia, as capt.gen. of Madrid, forcibly dissolved the cortes and appointed a provisional government with marshal Serrano at its head. Soon after the pronunciamiento in favor of Alphonso XII., Dec. 13, 1874, C. went to Switzerland, whence in Mar., 1875, he sent back his resignation of the chair of history in the university of Madrid. Among his writings are novels, poems, works on politics, slavery, the war in Africa, *Old Rome and New Italy* (translated into English), parliamentary discourses, etc. His oratory is vigorous and elegant.

CAS'TELL, EDMUND, 1606-85; an English orientalist who spent 18 years in compiling a lexicon of Hebrew, Chaldee, Syrian, Samaritan, Ethiopic, Arabic, and Persian. He spent from 16 to 18 hours a day on the work, and had 14 assistants. The outlay was \$60,000, which reduced him to poverty, but his losses were in part compensated by a number of preferments, among them that of prebend of Canterbury. C. assisted Dr. Walter in the preparation of the polyglot Bible.

CASTEL'LO, GIOVANNI BATTISTA, 1500-69; an Italian historical painter of the Genoese school. His best known works are the "Martyrdom of St. Sebastian," and "Our Savior as Judge of the World." He was also an architect and sculptor.

CASTEL'LO, VALERIO, 1625-59; a son of Giovanni Battista, who excelled his father in painting, especially in cattle scenes. He decorated the cupola of the church of the Annunciation, in Genoa, and painted the "Rape of the Sabines," in the Brignole palace in that city.

CASTELLON', a province in e. Spain, on the Mediterranean, 2,447 sq.m.; pop. '70, 296,222. It is a rough and mountainous region, containing many mines, and mineral springs. A railroad runs through the province parallel with, and not far from, the sea. The chief town is Castellon de la Plana, near the Mediterranean, 40 m. n.e. of Valencia, with which there is railroad connection; pop. 20,123.

CASTELNAU', MICHEL DE, SIEUR DE LA MAUVISSIÈRE, 1520-92; a French soldier and ambassador to the court of queen Elizabeth. He was thoroughly educated, traveled much, and served in the French army in active service in Italy, where his courage and ability secured for him the friendship of the cardinal of Lorraine, who took him into his service. In 1557, he was given a command in the navy, but soon rejoined the French army in Picardy. He executed several delicate diplomatic commissions so satisfactorily to the constable de Montmorency that he was sent by the king to Henry II. of Scotland with dispatches for Mary Stuart, who was then betrothed to the dauphin (afterwards Francis II). He went also to England and treated with Elizabeth respecting her claims in Calais, a settlement of which was made at the congress of Cambray. Afterwards he was sent to Margaret of Parma, governess of the Netherlands, and later still to Rome to ascertain the views of the pope with regard to France. Returning to France he again entered the navy and had the fortune to discover the earliest symptoms of the conspiracy of Amboise. After the death of Francis II. he accompanied the queen (Mary Stuart) to Scotland, remaining a year, during which time he made several journeys to England and attempted to bring about a reconciliation between Mary and Elizabeth, but his wise and temperate counsels were disregarded. In 1562, he retired to France in consequence of the civil war, and was employed against the Protestants of Brittany, by whom he was taken prisoner, but was soon afterwards exchanged. He served at the siege of Rouen and at the battle of Dreux, took possession of Tankerville, and contributed in 1563 to the recapture of Havre from the English. Within the next ten years he was employed in a number of important missions; first to queen Elizabeth to negotiate a peace; next to the duke of Alva, the new governor of the Netherlands, on which occasion he discovered the project formed by Condé and Coligny to seize and carry off the royal family (1567). After the battle of St. Denis he was again sent to Germany to solicit aid against the Protestants, and on his return was made governor of St. Dizier. In 1572, he was sent to England by Charles IX. to allay the excitement caused by the massacre of St. Bartholomew, and in the same year was sent to Germany and Switzerland. Two years later he was sent by Henry III. as ambassador to queen Elizabeth's court, where he remained ten years. While on this duty, with a view of strengthening and maintaining the alliance between the two countries he used his influence to procure the marriage of Elizabeth with the duke of Alençon; but Elizabeth made so many promises, only to break them, that C. at last refused to trans-

mit them to his government. On returning to France he was out of favor with the league, lost his governorship of St. Dizier, and was reduced to extreme destitution; but on the accession of Henry IV. he was, though a Roman Catholic, intrusted with many important missions. The memoirs of C. are valuable for their accuracy and impartiality.

CAS'TI, GIOVANNI BATTISTA, 1721-1803; an Italian poet of humble origin, who rose to the dignity of a canon in the church, but preferred, to further preferment, a life of travel to the gay cities of Europe. In 1782, on the death of Metastasio, he was appointed poet-laureate of Austria, in which position he devoted himself to comic operas. His best known work is *Gli Animali Parlanti*, freely used in W. S. Rose's *Court and Parliament of Beasts*. On the whole, his poems are harmonious and pure in style, lively and sarcastic, but without originality of plot, and often grossly licentious.

CASTIGLIO'NE, a village on the site of the old city of Gabii, in Italy, 10 m. e. of Rome. The place is noted for ruins of a temple to Juno, a theater, the ancient walls, and other relics of the past.

CASTIGLIO'NE, GIOVANNI BENEDETTO, 1616-70; a Genoese painter who studied for some time under Vandyke. He excelled in depicting fairs, markets, and rural scenes, and painted portraits and historical pieces. He also made many etchings which were remarkable for light and shade. Among the most famous of his paintings was "The Nativity of Jesus," in the church of San Luca at Genoa. His brother Salvatore, and his son Francesco, excelled in similar subjects.

CASTIGLIO'NE, GIUSEPPE, 1698-1768; an Italian Jesuit missionary who labored many years in Pekin and other parts of China. He was also an artist of ability, and it is said that the emperor Kien-Long erected several palaces from his designs.

CASTIL'LA, DON RAMON, 1797-1867; a Peruvian who entered the Spanish army in 1816, but soon after 1820 joined the revolt against Spanish rule. In 1830, Gamarra made him chief of staff of the whole army, and the provisional president appointed him brig-gen. After the treaty with the president of Bolivia, Castilla went to Chili, and in 1837 joined the Peruvians who marched against Santa Cruz, the president of Bolivia. When the revolutionists proclaimed Gamarra president, Castilla was made minister of war. In 1841, he was one of the leaders of the Peruvian force that invaded Bolivia, and in 1845 he was elected president of Peru. His successor, Echenique, became unpopular, and Castilla started a revolution, overcame Echenique, and became sole ruler of the country. One of his important reforms was the abolition of slavery. In 1858, he was re-elected president, and in 1860, he proclaimed a new constitution which granted universal suffrage and prohibited the exercise of any religion except the Roman Catholic. His last political movement was in 1867, when he led an insurrection against Prado, then president; and he was on his way to Arica when he died.

CASTILLEJO, CHRISTOVAL DE, 1494-1556; a Spanish verse-writer of great fertility, whose poems were about the last of the old Spanish school before the changes led by Garcilaso de la Vega. Being strongly anti-clerical, Castillejo's writings were usually noted on the Index Expurgatorius, and were smuggled into Spain from foreign printing-houses, while in a later period the agents of the church altered the verses to suit themselves. The works of Castillejo are in three books, one entitled *Love*, one *Conversation and Pastime*, and the third comprising moral and religious verses. He died in a monastery.

CASTINE, a t. in Hancock co., Maine, on the Penobscot, 34 m. below Bangor; pop. 70, 1303. It was here that the baron de Castine settled in 1667 a French colony, which was soon abandoned in consequence of Indian and English wars. In 1760, it was re-occupied by the English, who made a harbor that was always accessible for the largest ships. Castine is now a port of entry, and ship-building and fishing are the employments of the greater portion of the people.

CASTING. See FOUNDING, *ante*.

CASTLEMAINE, a t. in the province of Victoria, Australia, 65 m. n.w. of Melbourne; pop. '71, 7,308. It was a place of much importance when gold mining began, the diggings near by being among the earliest opened. The Victoria railroad passes through the town.

CASTLE PEAK, a peak of the Sierra Nevada in California, about 38° 10' n.; height estimated at 13,000 feet.

CASTLETON, a t. in Richmond co., New York, forming the n. portion of Staten Island, and occupied in part by the summer residences of business men of the city, pop. '75, 10,957; in '80, 12,723. New Brighton is the only considerable village. There are ferries from several points in the township to New York, and one to New Jersey; and a railroad connects with the southern part of the island. Among the institutions is "Sailor's Snug Harbor," a home for old and indigent seamen, established about the beginning of the century by capt. Randall. The surface of the township is hilly, and there are many charming sites occupied by handsome modern villas, from some of which wide views may be had over the city of New York, and large portions of New Jersey, Long Island, and the ocean.

CASTLETON, a village in Rutland co., Vt., 12 m. s. of Rutland, reached by the Rensselaer and Saratoga, and the Rutland and Washington railroads; pop. '70, 3,243. The slate quarries in the neighborhood are valuable. In the village is the state normal school.

CASTOR, ANTONIUS, an eminent botanist of Rome in the first century after Christ; several times quoted and mentioned by Pliny. He had a botanical garden, probably the earliest on record. He lived more than 100 years in perfect health, it is reported, both of body and mind.

CASTOR AND POLLUX, twin gods of Greece and Rome; known under the name of Dioscuri (from Dios or Jupiter, and Kouroi, children); children of Jupiter by Leda, who met the divinity in his form of a swan. The Dioscuri were specially revered among people of the Dorian race, and were said to have reigned at Sparta. They presided over public games, Castor being the god of equestrian exercises, and Pollux the god of boxing; but both were usually represented on fiery steeds, with spears, and egg-shaped helmets crowned with stars. They were the patrons of hospitality, and their aid was especially sought by travelers, to whom they were always gracious. Among their exploits were the invasion of Attica to rescue their sister Helen from Theseus; their part in the Calydonian hunt; their participation in the Argonautic expedition, during which they married the daughters of Leucippus; and lastly their battle with the sons of Aphareus, in which Castor (the mortal brother) was slain by Idas. On finding him dead, Pollux, who was immortal, implored Jupiter to permit him also to die; but Homer says the dead one was permitted to live again on condition that both should, on alternate days, descend to Hades, or that they should live only on alternate days. Another story is that they were placed among the stars, and now, as the Twins, form one of the 12 zodiacal signs. They were greatly venerated at Rome, where it was believed that at the battle of lake Regillus they fought at the head of the legions of the commonwealth, and afterwards with incredible speed carried to the city the news of the victory. Where they alighted near a well in the forum, a temple was built, and a great festival was held in their honor during the ides of Quintilis, the supposed anniversary of the battle, where sacrifices were offered at the public charge. A part of the ceremonies was a grand muster of the equestrian body, when all the knights, clad in purple and crowned with olive, assembled at the temple of Mars, out of the city, and rode in state to the forum where stood the temple of the twins. For centuries this pageant was one of the most splendid sights in Rome. In the days of Dionysius the cavalcade consisted of 5,000 horsemen, all persons of wealth and honorable repute.

CASTRATION, taking away, or destroying the natural powers, or the essential organs of generation in animals; in males the removal of the testicles, and in females a mutilation or removal of the ovaries, commonly called "spaying." The general purpose is to make domestic animals more docile and useful, and more valuable for meat, as well as to restrict unlimited reproduction. ○

CASTRÉN', MATTHIAS ALEXANDER, 1813-52; a native of Finland, and the first eminent philologist and antiquarian of that country. He traveled extensively in all parts of the country to become familiar with the language (having been educated in Swedish), and with the antiquities and folk-lore of the people. He also traveled among the Samois of Europe and Siberia to the provinces of China and the Arctic ocean. He was the first professor of the Finnish language and literature at the university of Helsingfors. All his works were published after his death, and a monument has been dedicated to his memory at Helsingfors.

CASTRO, GUILLEN DE, 1569-1631; a Spanish dramatist who enjoyed the friendship of Lope de Vega, whom he assisted in the famous festival of the canonization of San Isidoro, where he won a prize in the literary tournament. Castro wrote about 40 plays, the most celebrated of which was *Las Mercedes del Cid*, to which Corneille was greatly indebted for the materials of his renowned tragedy. It is said that Castro died in poverty and was buried by charitable friends.

CASTRO, HENRY, 1786-1861; a native of France, an officer of the national guard of Paris, who, after the downfall of Napoleon, emigrated to the United States, and in 1827, was consul for Naples at Providence, R. I. He returned to Paris 11 years later, became a partner in the counting-house of Lafitte, and was made consul-general for the new republic of Texas. He engaged in the business of sending out emigrants, and within a few years established at Castroville and other places settlements which, after the annexation, were organized into Medina county.

CASTRO, JOÃO DE, 1500-48; viceroy of the Portuguese Indies, son of the civil governor of Lisbon. He served in a military capacity in Tangier, Tunis, and elsewhere, and went to the Indies with his uncle, Garcia de Noronha. On arriving at Goa he enlisted among the "bravest of the brave" who were told off for the relief of Diu (a Portuguese settlement on an island of the same name, in the present province of Guzerat). Returning to Portugal he was made commander of a fleet to clear the European seas of pirates; and in 1545 he was sent out as viceroy of the Indies to supplant Martin de Souza. The next three years were full of struggle, suffering, and triumph. Valiantly seconded by his two sons, one of whom was killed before Diu, he overthrew Mahmoud, king of Cambodia.

relieved the beleaguered town of Diu, and defeated the great army of Adhel Khan. He subsequently completed the subjugation of Malacca, soon after which he was fully commissioned as viceroy, but did not live long to fill the place, dying the next year in the arms of his friend, St. Francis Xavier. He was buried at Goa, but the body was afterwards removed to Portugal, to be interred under a splendid monument in the convent at Bemfica.

CASTRUCCIO CASTRACANI, 1283-1328; a Ghibelline exiled at an early age with his parents and others of that faction; orphaned at the age of 19; served as a soldier in England, France, and Lombardy, until in 1313 he returned to Italy and was chosen chief of the Ghibellines, who had obtained mastery over the Guelphs. Thenceforth he passed a stormy life, chiefly in the support of the emperor Louis V., whom he accompanied to Rome, and who made him duke of Lucca, count of the Lateran palace, and senator of the empire. Castruccio was excommunicated by a Guelphic legate, and died soon afterwards, leaving several children, whose fortunes were wrecked in the Guelphic triumph that followed his death.

CASWALL, HENRY, D.D., 1810-70; b. in England, and emigrated to the United States at the age of 18, graduating at Kenyon college, Ohio. After some years of service as minister and professor of theology, in 1842 he returned to England, and procured a private act of parliament recognizing the validity of his ordination in the United States. He was appointed vicar, became proctor, and prebendary of Salisbury cathedral. About 1868, he returned to the United States, and he died in Pennsylvania. He wrote *America and the American Church*; *Scotland and the Scottish Church*; *The Western World Revisited*; *The Martyr of the Pongas*; and two works on Mormonism.

CASWELL, a co. in n. North Carolina, on the Virginia border, watered by the tributaries of the river Dan, and intersected by the Richmond, Danville and Piedmont railroad; 400 sq.m.; pop. '70, 16,081—9,494 colored. The chief productions are tobacco, corn, oats, and wheat. Co. seat, Yanceyville.

CASWELL, ALEXIS, D.D., LL.D., 1799-1877; one of the corporators of the national academy of sciences. He was professor of mathematics in Brown university from 1828 to 1850, and of mathematics and astronomy from 1850 to 1864, and president from 1868 to 1872. Author of a *Memorial of John Barstow*.

CASWELL, RICHARD, 1729-89; a revolutionary officer, native of Maryland, but an early settler in North Carolina, where he was for many years a member of the colonial assembly, speaker of the house, treasurer of the state, first governor, and thrice re-elected. He was a delegate to the convention that framed the federal constitution, and in 1787, was speaker of the state senate, and was presiding in that body when he was stricken with fatal paralysis. He was a brig.gen. in the patriot armies, and shared in the battle of Camden, and other conflicts.

CATAHOULA, a parish in Louisiana, on the Tensas, Black, and Saline rivers; 1770 sq.m.; pop. '70, 8,475—4,082 colored. The soil is fertile, producing corn, cotton, etc. Seat of justice, Harrisonburg.

CATALPA, a genus of trees of the order *bignoniaceæ*. The *catalpa syriaca* is a native of the s. portion of the United States, and is cultivated there and in the cities of the northern states as an ornamental shade-tree. It may be known by silver-gray bark, wide-spreading but few branches, and the fine pale green of its large heart-shaped leaves. The flowers are white, tinged with violet or purple, and dotted with the same colors. The flowers are succeeded by long bean-like pods, that sometimes hang on the otherwise bare limbs all winter. The wood is light and of fine texture, and useful in cabinet work. There is a catalpa in London said to have been planted by lord Bacon.

CATAMARCA, a province in the Argentine republic, between 25° and 29° s., and 66° and 69° w., lying at the foot of the Andes; 35,500 sq.m.; pop. '69, 79,962; the greater portion being of pure Indian blood. The province is intersected by several mountain-chains; and by many small streams, most of them dry in the summer, but in winter subject to destructive floods. Some of the plains are sandy deserts, while others are periodically inundated; and when the water dries away, it leaves a coating of salt, which is gathered for home use and for trade. Gold, silver, and copper are found, the latter in abundance; and nearly all the fruits and grains of tropical and temperate regions are grown. The cotton of C. is especially esteemed. Among the animals are large herds of alpaca, llama, and vicuña, and also horned cattle, asses, and mules. The main exports are wines, brandy, raisins, hides, leather, tobacco, cochineal, and copper. The people are occupied in agriculture, and in manufactures of earthenware, and fabrics made from the wool of the alpaca and kindred animals. The chief town and capital is the city of the same name.

CATAMARCA, the capital of the province of Catamarca, in the Argentine republic, 28° 20' s., 66° 25' west. It is a regular and moderately well-built town of about 6000 inhabitants. Of public buildings, there are a town-house, a Franciscan monastery, and a convent. There is considerable import-trade of European goods, and the place is a center of distribution for a flourishing district. Dried figs, wines, brandy, and cotton are the principal articles of export.

CATAMENIA. See MENSTRUATION, *ante*.

CATAMOUNT. See PUMA, *ante*.

CATARACTS and RAPIDS. See WATERFALLS, *ante*.

CATASAU'QUA, a t. in Lehigh co., Penn., on Lehigh river, 3 m. above Allentown; pop. '70, 2,853. The Lehigh Valley and the Lehigh and Susquehanna railroads unite here.

CATAW'BA, a co. in w. North Carolina, on the Catawba river, crossed by the Western North Carolina railroad; 250 sq.m.; pop. '70, 10,984—1703 colored. It has a varied surface and fertile soil, producing wheat, corn, oats, etc. Iron ore is found in abundance. Co. seat, Newton.

CATAW'BA, or GREAT CATAWBA, a river rising in the Blue Ridge in n.w. North Carolina, and flowing e. and s. through the gold region of that state into South Carolina, where it takes the name of the Wateree and joins the Congaree, the two forming the Santee. The C. is about 250 m. long.

CATAW'BAS, Indians of North Carolina, once a large tribe in the region of Catawba river, but now a mere remnant. At the time of the early white settlements, they could muster many thousands of warriors, and as late as the revolution were able to furnish a valuable contingent to the Carolina troops. They occupied several towns along the river that still bears their name; but at last leased the lands to the whites, and removed into the territory of the Cherokees, with whom they had been at war. After a short residence they returned to a reservation in their original district. Their language is closely allied to that of the Waccos and the Caroline tribe. Peter Harris, a revolutionary soldier, was said to be the last full-blooded survivor of the Catawba tribe.

CATCH-DRAINS, open drains, and sometimes covered drains, along a declivity to intercept and carry off surface water.

CATECHETICAL SCHOOLS, the name given to the ancient Christian schools of theology, of which the chief were those of Antioch and Alexandria. Clement and Origen were the most famous of the teachers.

CA'TEL, FRANZ, 1778—1856; a German artist who first gained reputation by his illustrations of Goethe's *Hermann and Dorothea*. He labored in Paris and Rome, and his works found their way all over the continent. He left all his fortune for the benefit of poor artists.

CATERPILLAR FUNGUS, or FUNGOID PARASITES, a species of fungus that attacks insects, particularly the larvæ of moths and beetles, filling their bodies and sending shoots beyond the skin so that the creature takes the appearance of a vegetable growth. These growths vary in length from a slight projection to nearly a foot, and in diameter from a hair to a quarter of an inch. The fungi attacking insects also infest all organic and decaying matter.

CATES'BY, MARK, 1680—1749; an English naturalist who was seven years in the American colonies, returning to England in 1719 with a fine collection of plants. He made another journey in 1722, exploring South Carolina, Georgia, Florida, and the Bahamas. He published *Natural History of Carolina, Florida, and the Bahama Islands*, in which the figures were etched by himself from his own paintings. He also wrote *Hortus Europæ Americanus* and a paper on *Birds of Passage*.

CAT-FISH, a name given to several species of the family *Siluridæ*, dwelling in American rivers and lakes. The common cat-fish, or horned pout, of the Atlantic slope, is preferred above most river fish for food. They are from 7 to 9 in. long, dusky brown in color on the back and sides, and white underneath. The upper jaw is the longest; the tail is rounded; skin without scales and commonly covered with a slimy secretion. It has two fleshy barbels (long beard like spines) on the top of the nose, and others at the angles of the jaws. Its mouth is very large. Immense cat-fish are found in the great lakes and western rivers, more than 4 ft. long and weighing 60 to 150 lbs.

CATHARTES AURA, a vulture known as the turkey-buzzard, from its resemblance to the domestic turkey. Its home is in the southern Atlantic and gulf states, though it is sometimes found in the West Indies. The full-grown bird is 30 in. long, with a spread of wings of 6 ft., and the color black and brown. This greedy bird acts as the scavenger for southern cities, devouring refuse matter that might otherwise be injurious to the public health. For this purpose they are deemed so valuable that in some places their destruction is forbidden. There is a small species known locally as the carrion-crow.

CATHAY. See CHINA, *ante*.

CATHEDRAL (*ante*). As Christianity was at first established chiefly in cities, the churches that grew up adjacent to them were, either originally or eventually, included in the diocese of the city bishop. Throughout the Roman empire the ecclesiastical divisions were the same as the civil, and the bishop's seat was placed in the same city with the governor's chair of state. From this point the transition was easy to the formal decree requiring that a C. as the seat of a bishop should be established in cities only. In Britain, however, where in the early days of Christianity cities were few and small, this rule could not be enforced. The bishop was over a district or tribe rather than

a city, and naturally placed his seat where he found it most convenient and safe. Often he was compelled to remove it from one place to another. As the country became more settled this necessity ceased to exist, and at the close of the 11th century a law was passed requiring that the sees of bishops should be removed from villages to walled cities. In the early missionary work, especially of Britain, instead of beginning with a bishop, companies of priests were organized, with the church as their center of work and the monastery as their home. After sufficient progress had been made, a bishop was appointed over them, and the church became a cathedral. The revival of missionary work by the church of England, at the beginning of the present century, led to a renewal of this system. The bishop followed the missionaries, and placed his seat in a church not originally designed for the honor. In colonial and foreign missionary work, within the last 25 years, there has been a return to the earlier plan. In the dioceses of Africa, New Zealand, and elsewhere, the bishop takes the lead in the date of his appointment as well as in rank, and his cathedral church is at once erected and manned. In this way the original design of such an establishment as described by bishop Stillfleet is accomplished. "Every C., in its first institution, was as a temple to the whole diocese, where the worship was to be performed in the most decent and constant manner; for which end it was necessary to have such a number of ecclesiastical persons there attending as might still be ready to do all the offices which did belong to the Christian church—such as constant offering of prayer, singing, preaching, and administering sacraments—which were to be kept up in such a church as the daily sacrifice was in the temple." The bishop in his church was surrounded by his college of presbyters, of which he was the head, and the design of which was: 1. To strengthen him by wise counsel. 2. To maintain public worship with reverence and dignity. 3. To go forth at his command, as evangelists, whithersoever he might send them. In this way the chapter of the C. was established, originally in closest connection with the bishop, and having no corporate existence separate from him. It sometimes consisted of "secular clergy," who were not bound by monastic vows, and had separate homes of their own; and sometimes of "regulars," who were under monastic rule and lived in buildings common to all. Of both kinds of chapters the bishop was the head: of the latter, as the abbot of the monastery to which his cathedral church belonged; and of the former, as having sole authority over it. In early times, there was an arch-presbyter, who had chief authority among the cathedral clergy, always in strict subordination to the bishop. He was gradually supplanted by the archdeacon, who was followed in the 8th and 9th centuries by the "prepositus" or provost. The "dean," the present head of all English cathedral chapters, first appears in the 10th or 11th century. Gradually, as the bishop's diocesan duties increased and important political functions also were assigned him, he was obliged to leave the affairs of his C. to the head of the chapter, who consequently, in time, became the actual chief; and when the chapter was organized as an independent corporation, the bishop, seldom present, sank into a mere "visitor," called in occasionally to correct abuses or settle disputes. This is the explanation of the strange anomaly, witnessed in modern times, that in his own cathedral church, of which he is the titular head, and which is dignified by the presence of his seat, the bishop has less authority than in any other church of his diocese. Under the bishop as its *nominal* head, the chapter of a fully organized C., formed of secular priests, consisted of four chief dignitaries and a body of canons. I. The four high officers were: 1, the "dean," as the general head of the chapter charged with its internal discipline; 2, the precentor, presiding over the choir and musical arrangements; 3, the chancellor, who superintended the religious and literary instruction of the younger members, took care of the library, and wrote the letters; 4, the treasurer, to whom were intrusted, not the money of the church (as might appear from the modern use of the word), but its sacred vessels, altar-furniture, reliquaries, and similar treasures. II. In addition to these dignitaries, a cathedral chapter consisted of a board of officers called canons, because they were inrolled on the *list* and perhaps because they were subjected to the *rules*; some of them who enjoyed a separate estate (*præbenda*) in addition to their share of the corporate funds, were called prebendaries. A prebendary was always a canon, but a canon was not always a prebendary. Each canon had his own house and personal establishment. In the middle ages an attempt was made to impose on them, in part, monastic rules with dining-hall and lodging-rooms in common; but the restriction was never acceptable, and was gradually given up. Monastic cathedrals closely resembled other monasteries, except that in the almost constant absence of the bishop—their nominal abbot—they were governed by a prior. At the reformation the distinction between secular and monastic cathedrals was maintained under the titles of cathedrals of the old and new foundations. And when the monasteries were suppressed, the cathedrals connected with them were furnished with new chapters of secular canons, presided over by a dean. In the early part of queen Victoria's reign all the cathedrals in England and Wales were reduced to a uniform constitution.

In the Protestant Episcopal church in the United States, there is in recent years an evident movement in some dioceses toward the establishment of the cathedral system of England, with such modifications as the circumstances may require. For the diocese of Long island, noble structures are now in process of erection at Garden City, including schools of various grades, and institutions of beneficence, grouped around a magnificent

cathedral church. The funds for this great work are from the estate of the late Alexander T. Stewart, of New York.

CATHERINE OF BRAGANZA, 1638-1705; queen of Charles II. of England, daughter of John, duke of Braganza, the rightful heir to the throne of Portugal, then under Spanish rule. John headed the revolt of 1640, and after years of fighting succeeded in reaching his throne. The mother of Catherine was a woman of ability, and governed Portugal for several years after the death of her husband. She foresaw the coming restoration in England, and proposed the marriage of Catherine with Charles mainly to gain a powerful ally against Spain. The latter power vainly tried to prevent the marriage, and when it was agreed upon, Portugal promised a dowry of £500,000, and the towns of Tangier and Bombay (the latter being the first of the now enormous English possessions in the east), besides many privileges of trade. On the marriage at Plymouth, May 13, 1663, Charles appeared to be well pleased with his bride; but the union proved unhappy. Catherine had been brought up in a convent, and had none of the manners required by the most fashionable and profligate court of Europe. The chief trouble, however, was the heartless and shameless profligacy of her husband, who brought his mistresses into the court, and, when the queen expressed her indignation at the insult, lectured her upon the duty of submission. After repeated humiliations of this kind, the queen's spirit was broken, and alienation naturally followed. As she was a Roman Catholic, she was an object of suspicion outside of the court, and her name was subjected to calumny. The only satisfaction she could experience in her unfortunate connection was the great aid rendered by England against Spain in the struggle of her native power with that kingdom. After a life of entire seclusion during the reign of James II. and the first years of William III., she returned to Portugal in 1692, where, for a time before her death, she acted in capacity of regent to her brother, Don Pedro. She had no children.

CATHERINE FIESCHI ADORNO, SAINT, 1477-1510; a daughter of the vicerey of Naples, who, at the age of 13, devoted herself to a religious life, but three years later, in obedience to parental desire, married Julian Adorno, a gay young nobleman of Genoa—a reckless fellow, who spent her fortune and gave her a life of misery for many years. After his death she became mother-superior in the hospital, and extended her care to the sick throughout the city. She wrote several works, two of which, *Purgatory*, and *Dialogue Between the Soul and the Body*, are evidently records of her own experience. She was canonized in 1737. In her, a piety contemplative, mystical, and almost ecstatic, had an accompaniment not always found of active beneficence.

CATHERINE OF VALOIS, or OF FRANCE, 1401-26; Queen of Henry V. of England. She was unfortunate in her childhood, her father, Charles VI. of France, being subject to prolonged fits of insanity, while her mother—who was one of the most abandoned women of the time—neglected her children to such an extent that they were often without suitable food or clothing. She was at last taken away from her mother and educated in a convent. When she was only 12 years old, Henry asked her hand in marriage, coupling the proposal with a demand for a large dowry in money, and the restitution to England of the French provinces once held by the English crown. The proposition was indignantly rejected, and Henry soon afterwards invaded France and asserted his claims in a manner that was not to be resisted. All his claims were admitted, and when he married Catherine at Troyes in 1420 he received immediate possession of the provinces claimed, the regency of France during the life of the father-in-law, and the reversion of the sovereignty after the death of Charles. In 1421, Catherine was crowned at London, and in Dec. of that year she became the mother of Henry VI. The next year she was in France, where her husband died, and she returned to London with the funeral cortège; but after the funeral little is heard of her history, the only notable event being her secret marriage to Owen Tudor, the heir of a princely house in Wales, who had distinguished himself for bravery at Agincourt. His position in England, however, was low, and the marriage was long kept secret—a necessity that caused Catherine much vexation and probably hastened her death. Her son by Tudor was made earl of Richmond, and married Margaret Beaufort, heiress of the house of Somerset, and junior representative of the branch of John of Gaunt, and she became the mother of Henry VII., and consequently the ancestress of the Tudor line of English kings.

CATHOLIC APOSTOLIC CHURCH. See IRVINGITES, *ante*.

CATHOLIC, or UNITED, COPTS, a body of about 10,000 native Egyptians who acknowledge the authority of the pope of Rome. In 1855, one of their priests was appointed vicar apostolic and bishop *in partibus*.

CATTNEAU-LAROCHE, PIERRE MARIE SÉBASTIEN, 1772-1828; a French philologist who emigrated to San Domingo, where his antislavery sentiments were so obnoxious that he was prosecuted and saved from death only by the interference of the home government. He went to Cape Haytien, where in the great massacre he alone of 17 Frenchmen was saved. He returned to Paris by way of the United States, set up a printing-office, and produced several dictionaries. In 1819, he was sent by the govern-

ment to study the climate of French Guiana, and three years later his notes were published.

CATLIN, GEORGE. 1796-1872; b. Penn.; an artist celebrated for his travels, writings, and portraits of American Indians. He was bred to the law and practiced for a year or two in Philadelphia, but having a taste for art he established himself in New York as a portrait-painter. About 1832, he became impressed with the fact, that the most remarkable American Indians were fast disappearing, and resolved to rescue at least the portraits of some of them from oblivion. In pursuit of this object he traveled and dwelt among the aboriginal tribes in North and South America, acquiring their languages, and thoroughly studying their manners and customs, traditions, history, and modes of life. After collecting many portraits, and many sketches of life and scenery, he published in London, in 1841, a large work on the *Manners, Customs, and Condition of the North American Indians*, with 300 illustrations. In 1844, followed the *North American Portfolio of Hunting Scenes*; in 1848, *Eight Years' Travels and Residence in Europe*, in which he gives the stories of several Indians whom he had introduced to various European courts. In 1861, he published a little monograph which created much interest among medical men, entitled *The Breath of Life*, in which he argued the importance of keeping one's mouth closed when sleeping—an idea doubtless suggested by the fact that the Indians use special care in this respect. His last work was *Last Rambles among the Indians of the Rocky Mountains and the Andes*.

CATMANDOO. See KHATMANDU, *ante*.

CATNIP. See CATMINT, *ante*.

CATOO'SA, a co. in n.w. Georgia, watered by affluents of the Tennessee river, and crossed by the Western and Atlantic railroad; 175 sq.m.; pop. '70, 4,409—616 colored. The region is hilly, with much woodland. The productions are chiefly agricultural. Co. seat, Ringgold.

CATSKILL, a village on the Hudson river, in e. New York, the capital of Greene co., 34 m. s. of Albany; pop. '75, 6,679. C. is one of the landing places for the thousands of visitors who go annually to the Catskill mountains, a few miles westward. A ferry across the river connects with the Hudson River railroad. There are several important manufactories in the village.

CATSKILL GROUP; in geology, the name of rocks of the Devonian system seen in the northern counties of Pennsylvania. They are chiefly red sandstone and shale, and contain fossil scales of the earliest fishes. The Catskill mountains were formerly supposed to belong in this group, whence the name, now known to be inappropriate.

CATSKILL MOUNTAINS (*ante*), a part of the Appalachian system w. of the Hudson, river in Greene co., N. Y. The group, about 12 m. long, nearly parallel with the river about, 8 m. distant, turns westward in spurs extending many miles. Besides the Ulster and Delaware railroad, beginning at Kingston and leading w. into the mountains, there is a good wagon road from Catskill village to the "Mountain House," 12 m. w., which is a favorite summering place. The house stands on a terrace 2,231 ft. above the river, and almost at the edge of a perpendicular cliff several hundred ft. high. There is another public house on Overlook mountain, a few miles to the s., which is estimated to be 3,800 ft. above tide. The views from these houses and from the neighboring peaks are wonderfully varied and beautiful, reaching from the Green mountains in Vermont to the highlands at West Point, and taking in nearly 100 m. of the Hudson river and valley, with numerous cities and villages, and a vast expanse of highly cultivated farming country. An immense number of summer boarders are accommodated through all this region, not only in hotels, but also in countless farm-houses and village homes. One of the highest points is the top of Overlook, 3,800 feet. The other prominent elevations are Hunter mountain, High peak, and Round Top. One of the sights of the region is "The Clove," or ravine, and the falls therein. The ravine is about 5 m. long. At its head two rivulets unite and flow rapidly to a point where the mountain divides and forms a deep hollow into which the brook rushes over a cascade of 180 ft.; and further down are other falls, one of 80 and another of 40 feet. The ice formation in winter around the highest fall is particularly grand and beautiful. There are other ravines and water-falls in the region, but none equally important. The mountains are for the most part covered with thick forests of oak, hickory, ash, maple, beech, pine, etc.

CATTACK. See CUTTACK, *ante*.

CATTARAUGUS, a co. in w. New York, on the Pennsylvania border, watered by the Allegheny and other rivers, and intersected by the New York and Erie and the Atlantic and Great Western railroads, and the Genesee Valley canal; 1250 sq.m.; pop. '75, 47,130. The surface is undulating and the soil fruitful. The chief products are wheat, corn, oats, potatoes, hay, cheese, butter, wool, hops, and maple sugar. Iron, manganese, marl, peat, and sulphur are found. Co. seat, Little Valley.

CATTY (Malayan, *kati*; Japanese, *kin*), the unit of weight used throughout Chinese and Malayan Asia, and by the Chinese all over the world. American scales exported to Asia are graduated into catties. A catty is $1\frac{1}{2}$ pounds avoirdupois.

CATTYWAR. See KATTYWAR, *ante*.

CATULUS, QUINTUS LUTATIUS, d. 87 B.C.; consul of Rome with Caius Marius. Catulus was beaten by the invading Cimbri and driven across the Po, but Marius came to his aid, and the barbarians were defeated at Vercellæ in July, 101 B.C. In the civil war Catulus supported Sulla and was proscribed. Preferring death to capture, he suffocated himself over burning charcoal.

CATULUS, QUINTUS LUTATIUS, son of the consul; made consul in 78, and censor in 65, B.C. He put down a rebellion incited by Lepidus after the death of Sulla, and assisted Cicero in the suppression of Catiline's conspiracy.

CAUCA, one of the United States of Colombia, occupying the whole w. coast of the Caribbean sea to Ecuador, including the chain of the Andes and the valley of the Rio Cauca; 257,462 sq. m. (more than half of the republic); pop. '71, 435,078. The region is well cultivated, producing cereals, sugar, tobacco, coffee, cocoa, cotton, etc., and vast herds of horned cattle and mules. The capital is Popayan.

CAUCASUS, INDIAN. See HINDU-KUSH, *ante*.

CAUCHON, JOSEPH, b. 1820; a Canadian journalist and legislator, who has been in the colonial or Dominion parliament since 1844. From 1867 to 1872 he was speaker of the senate. He established the *Quebec Journal* in 1842, and has conducted it ever since.

CAUCHY, AUGUSTIN LOUIS, 1789-1857; a French mathematician; a member of the academy in 1816, and professor of mathematics in the polytechnic school. His reputation rests chiefly upon his residuary and imaginary calculus. In politics he was a firm legitimist, steadily refusing to take the oaths of allegiance from time to time proffered, and on that account resigning his chair of mathematics in the new university of Paris in 1852. He published several valuable works on the calculus, on analysis, and other mathematical themes.

CAUCUS, a meeting, private or public, of citizens to select candidates for office; or of members of a legislative body for a similar purpose. Recently the meaning of the term has been extended to almost any conference previous to final action. Thus the people may hold a C. to ask or instruct their representative to support one or another measure; or the members of a party in congress, legislature, common council, or town-meeting may hold a C. to determine their course upon any subject. Legitimately, therefore, the term C. means a preliminary or preparatory meeting to arrange methods for some designated end. Much effort and ingenuity have been spent in trying to settle the origin of the term, but the most probable theory is that it came from Boston about the middle of the last century, and originally meant "the calkers' meeting," that is, the private gathering of the ship-calkers. The term was applied almost indiscriminately to meetings in the period preceding the revolution, and when the federal government was instituted it was accepted as the official term for what are now called "nominating conventions." Candidates for president of the United States were uniformly selected by a C. of the members of congress of the several parties, from 1789 to 1823. In the election of 1824, the regular democratic C. candidate, William H. Crawford, ran behind both Jackson and Adams, and but for some jugglery in New York would have run even behind Clay and come out the lowest of the four. This result ended the congressional C. system of presidential elections, and since that time candidates have been nominated by national conventions or political parties. Soon afterwards state conventions supplanted the legislative C. for the nomination of state officers, and now the C. is practically confined to the meetings of partisans in legislative bodies to decide upon a policy, or to select candidates for presiding and other officers of the particular body, or (by joint C. of senators and members of assembly) to settle upon nominees for U. S. senators. Outside of these special functions partisan work is now usually managed by conventions of the party at large, or by smaller conventions of delegates chosen by the voters of the party, or by committees appointed by such conventions.

CAUGHINAWA'GA a village in Canada, 9 m. w. of Montreal, on the s. bank of the St. Lawrence, at the head of the Lachine rapids. It is inhabited exclusively by Indians, remnants of the once powerful Iroquois. They are about 500 in number.

CAULIER, MADELEINE, a peasant girl of France who aspired to the military fame of the maid of Orleans. At the siege of Lille, in Sept., 1708, she conveyed into the city an important order to the officer in command, for which the duke of Burgundy offered her a large reward. This she declined, but received permission to raise a company of dragoons. She was killed in the battle of Denain, July 24, 1712, when marshal Villiers defeated the imperialists.

CAULONIA, an ancient Greek city in Italy near the gulf of Syllacium. It was a town of importance five centuries before Christ. In 389 B.C. it was captured by Dionysius the elder who removed its people to Syracuse. Porphyry asserts that Pythagoras sought refuge in Caulonia after his expulsion from Crotona.

CAUS, or CAULX, SALOMON DE, 1576-1630; a French engineer and physicist who resided in England and in Heidelberg, and later in Paris. Little was known of him until Arago exhumed his works, from which he considered him to have been the real inventor of the steam engine, for in one of these works he gave the plan of an apparatus

for raising water by the power of steam. Some critics believe that it was from Caus that the marquis of Worcester got the idea, printed in his *Century of Inventions* in 1633, of the "exact and true deposition of the most stupendous water-commanding engine, invented by the right honorable Edward Somerset, lord marquis of Worcester."

CAUTERETS, a watering place in Hautes-Pyrénées, France, 26 m. from Tarbes. It is in a basin 3,254 ft. above tide, and is noted for its many hot sulphur springs ranging from 102° to 140° F. Pop. 1300.

CAUTERY. See BLEEDING, and MOXA, *ante*.

CAVAIGNAC, ELÉONORE LOUIS GODEFROY, 1801-45; a journalist of Paris, son of Jean Baptiste. He was an opponent of Louis Philippe and one of the prominent founders of the "Société des Amis du Peuple," and of the "Société des Droits de l'Homme." He was often arrested and sometimes imprisoned, but escaped in 1835 and went to Belgium. In 1841, he returned to Paris and became one of the editors of the *Reforme*, the ablest of the opposition newspapers.

CAVAILLON, a t. and important railway junction in Vaucluse, France, 13 m. s.e. of Avignon. It is a poorly built and dirty place, but has a fine town-house, an old church of the 12th c., and the remains of a triumphal arch of about the time of Constantine; other relics of the Roman period are found in the neighborhood. There is considerable trade in dried fruits, madder, and the agricultural productions of the fertile region around. Pop. '72, 3,906.

CAVALCANTI, GUIDO, d. about 1300; an Italian poet and philosopher, the son of the philosopher whom Dante pictured in torment among the Epicureans and Atheists—but himself a friend of the great poet. By marriage C. became the head of the Ghibellines, and, after some years, was banished with the other leaders, and died in exile. His poems are chiefly in honor of a French lady by him called Mandetta. He also wrote on philosophy and oratory.

CAVALIER, JEAN, 1680-1740; a native of lower Languedoc, in southern France; the famous chief of the Camisards (who in some particulars seem to have been the precursors of the English and American shakers). He was a peasant's son, and was employed in sheep-keeping, afterwards as apprentice to a baker, and within that period trained by a pious Protestant mother. He was driven from his native place by the pitiless persecution of Protestants that followed upon the revocation of the edict of Nantes, and took refuge in Geneva. The murderous dragonnades of Louis XIV. drove the Protestants of the Cévennes at last to revolt, and C., inspired with the hope of being their deliverer, returned in 1702 to his own country, where he became one of the chosen leaders of the insurrection, which broke out in July of that year. It was Roland who was put in chief command, but C. soon rose to be his equal, and, though untrained in arms, he displayed not only fiery courage, but extraordinary military skill. Although these "children of God," as the insurgents were called, numbered at the most not more than 3,000 men-at-arms, they coped successfully again and again with the far greater forces of the king, and were never entirely conquered. After several conflicts, C. changed the seat of the war to the Vivarais; and Feb. 10, 1703, defeated the royal troops at Ardeche; but only a few days later he was completely defeated on the same ground, and was supposed to have fallen. He reappeared, however; was again defeated at Tour-de-Bellot; and again recovered himself, recruits gladly flocking to his standard to take the places of the slain. By a long series of successes he raised his reputation to the highest pitch, and gained the full confidence of the people. The harshest measures were tried in vain against the Camisards; their mountain retreat was invaded by the Roman Catholics, and their houses sacked and burned; but C. retaliated in kind, invaded the region of the plains, and even threatened the city of Nîmes. April 16, 1704, he encountered marshal Montrevel at the bridge of Nages with 1000 men against 5,000, and, although defeated, managed to retreat with two thirds of his forces. Marshal Villiers was next sent against him, but proposed to negotiate instead of fighting. Roland refused to listen, but C. agreed to treat, and did so, the result being that C. received for himself a commission and a pension of 1200 livres, and for his brother a captain's commission. C. was authorized to raise a regiment of Camisards to be sent to Spain, and liberty was given to his father and other Protestant prisoners. This treaty, which did not include any provision for general liberty of conscience, excited great indignation among the companions of C., who called him coward and traitor, and deserted him. He was greatly disheartened at this treatment, and soon afterward visited the king in Paris, by whom he was coldly received. These disappointments and rebuffs, together with stories current of probable attempts upon his life, impelled him to leave France. He went to Switzerland, and then to Holland, where he married a daughter of Mme. Dionoyer, a lady of Nîmes, who had once been sought in marriage by Voltaire. C. then went to England to recruit his regiment of Camisards, and had an interview with queen Anne, who sent him with his regiment to Spain under the earl of Peterborough and sir Cloudsley Shovel, in May, 1705. At the battle of Almanza his Camisards encountered a French regiment which they had met in the Cévennes, and, without firing, both bodies rushed upon each other in a fierce hand to hand fight, and made a fearful slaughter, C. being severely wounded, but saved from death by an English officer. Long after his return

to England he was made a maj.gen., and governor of Jersey; and finally governor of the Isle of Wight. He died at Chelsea, where he was buried.

CAVALLINI, PIETRO, 1259-1344; a Roman artist taught by Giotto, whom it is believed he assisted in the mosaic of the ship of St. Peter, in the porch of St. Peter's church. He was also an adept at painting, and his grand fresco of the crucifixion at Assisi is still in tolerable preservation.

CAVALRY (*ante*). The earliest records of C. as a distinct military organization date far back in the history of Egypt. Diodorus of Sicily states that Osymandias, who lived long before the Trojan war, led 20,000 mounted men against the rebels in Bactriana. Josephus states that the host of Israelites which escaped from Egypt included 50,000 horsemen and 600 chariots of war. Herodotus often alludes to C.; and Xenophon relates that in the first Messenian war, 743 B.C., Lycurgus formed his C. in divisions. In the year 371 B.C., Epaminondas had a C. force of 5,000 men, and we know that C. contributed greatly to the victories of Philip and Alexander of Macedon. It had an important part in the battle of the Granicus, 334 B.C.; and at the battle of Arbela, 331 B.C., Alexander, who led the Macedonian C. of 7,000 men, dashed into a gap of the Persian army, and by this brilliant feat utterly routed the enemy. After the death of Alexander, the C. of Greece and Macedon greatly degenerated. The Roman cavalry was very inferior to that of Hamilcar and Hannibal, and most of the victories of these two generals were won by cavalry over the splendid infantry of the Romans. Publius Scipio's defeat at the Ticinus, 218 B.C., was due to the superiority of the Carthaginian horse; and the bitter experience at the Trebia and the battle of Cannæ, 216 B.C., taught the Romans the value of cavalry, by which Scipio finally defeated Hannibal at Zama, 202 B.C. Vegetius states that the Roman C. was organized into ten troops or squadrons, forming a regiment of 726 horses, generally attached to some special legion. It is a singular fact that saddles were not in use until the time of Constantine, and stirrups were introduced by the Franks in the 5th century. During the middle ages C. may be said to have constituted almost the only efficient arm of battle. This was owing to the unwillingness of the nobility in all countries of western Europe to intrust any military power to the serfs; the upper classes went into battle mounted, and both riders and horses had heavy defensive armor. The feudal cavalry consisted of mail-clad knights with their men-at-arms. Their weapons were lances, battle-axes, and swords. The infantry was looked down upon during the middle ages, being composed principally of serfs and such as had not the means to keep a horse; but with the invention of gunpowder, the introduction of muskets, and the use of field artillery, a complete change took place; the infantry gradually rose in reputation, and the number of this class of troops was augmented. It seems that light C. did not exist as a distinct body, with general officers and a staff, before the time of Louis XII. Monthuc, however, mentions a general of 12,000 light horse in the time of that monarch; and we hear of Henry II., in 1552, taking a troop of 3,000 cavalry in his expedition to Germany. In 1554, marshal De Brisac formed a corps of mounted infantry, called dragoons, trained to fight either on horseback or on foot. Maurice of Nassau, who saw the importance of giving more mobility to this arm, was the first to organize cavalry regiments, each regiment being composed of four squadrons, formed in five ranks, and numbering about 1000 horses. Gustavus Adolphus was a great C. general, and used his cuirassiers and dragoons to good advantage. His tactics were much admired, and were adopted by many European nations. The French, especially, distinguished themselves after his death in the employment of C. Turenne, Condé, Montecuculi, and Marlborough were considered excellent C. leaders in the wars of Louis XIII. and Louis XIV. Cromwell was indebted to his abilities as a C. officer for the victories of Marston Moor and Naseby. Defensive armor for C. had been abolished in his time, and the C. troops were taught to use the carbine. Charges of cavalry were seldom made in battle except by the French; though Charles XII. always made use of cavalry charges at full speed with great effect. Marshal Saxe made many improvements in this arm, and used guns in connection with cavalry at the battle of Fontenoy, although regular horse artillery was not introduced till 1762. It was not until the wars of Frederick the great, however, that the full importance of cavalry was developed; he saw the necessity of training these troops to use swords instead of fire-arms, and endeavored to make them perfect riders. No firing whatever was allowed in the battle during the first charge; he claimed that the only two things required to beat the enemy were to charge him with the greatest possible speed and force, and then to outflank him. The brilliant victories he obtained from the adoption of these tactics under the able leadership of Seydlitz have probably never been excelled. At the battle of Hohenfriedberg the Prussian cavalry of 10 squadrons broke 21 battalions, routed the entire left wing of the Austrian infantry, and captured 66 standards, 5 guns, and 4,000 prisoners. At the battle of Zorndorf, after the Russians had compelled the Prussian infantry to retreat, Seydlitz with 36 squadrons rode down the Russian cavalry, and then completely routed their infantry. Frederick had learned to appreciate the true principles of mounted warfare through long experience and the occasional disasters which he had met in the first and second Silesian wars; and it was due to the efficient reforms which he instituted in the Prussian cavalry that he was able to win the battles of Ross-

bach, Striegan, Kesselsdorf, Leuthen, and others. One of the first improvements made in the French army by Napoleon was the reorganization of the cavalry. He increased the cuirassiers from one regiment to twelve, and reintroduced the use of the lance and defensive armor. Some of his splendid victories were due to this force, especially at Marengo and Austerlitz; and it was owing to the loss of the French cavalry in the Russian campaign of 1812 that some of his finest achievements in 1813 proved useless. he was well aware of this, and made the statement that had he possessed cavalry at the battles of Lutzen and Bautzen the war would then have been brought to an end. In modern warfare it may be mentioned that cavalry was conspicuous at the battle of Solferino; but in 1863, the first great European war since Waterloo, neither the Austrian nor the Prussian cavalry won great distinction, although the manner in which the Austrian cavalry covered the retreat of their army at the battle of Königgrätz was a noble example of courage and devotion. In the Franco-German war of 1870, however, the excellency of the Prussian cavalry was the chief means of Von Moltke's ability to carry out his strategic plans. The French cavalry were more remarkable for bravery than efficiency. Great progress was made in the C. of the United States during the war of the rebellion; a large number of men of both armies were good riders, and understood the management of horses. They were at first, however, quite ignorant of military tactics, and were used as scouts, as orderlies, and for outpost service. Gen. Sheridan, acting under instructions from gen. Grant, made the first successful organization of C., which was called the cavalry corps of the army of the Potomac, comprising three divisions of 5,000 mounted men each. Their weapons were repeating carbines and sabers. It was with this force that gen. Sheridan defeated the confederate C. at Yellow Tavern, near Richmond; and it contributed largely to the defeat of Early at the battle of the Opequan, near Winchester; and later, at the battles near Petersburg and at Five Forks, the C. took an important part. Gen. Wilson, whom gen. Sherman put in command of a force called the C. corps of the military division of the Mississippi, did good work in the way of organization towards the close of the war; he had 12,000 mounted C. and 3,000 who fought on foot at the battle of Nashville, not including a detachment of 3,000 men in Kentucky.

Our C. system is similar to that of European countries; a regiment consists of 10 companies of 64 men each; 2 companies form a squadron; they are armed with sabers, pistols, and carbines. According to the army regulations, the C. in battle should be distributed in echelon on the wings and at the center, on favorable grounds; it should be instructed not to take the gallop until within charging distance; never to receive a charge at a halt, but to meet it; or, if not strong enough, to retire maneuvering; and in order to be ready for the pursuit, and prepared against a reverse, or the attacks of the reserve, not to engage all its squadrons at once, but to reserve one third, in column or in echelon, abreast of or in the rear of one of the wings; this arrangement is better than a second line with intervals. When the regular army, pursuant to the act of congress of Aug. 15, 1873, was reduced to a maximum of 25,000 men, the United States C., consisting of 10 regiments, with 439 officers and 7,911 enlisted men, was left intact.

CAVEAT EMPTOR, notice to a purchaser of property to beware or be watchful of his rights. In a sale of real estate the rights of the purchaser depend entirely upon the covenants of title which he receives; but personal property the purchaser takes at his own risk, unless the seller gives an express warranty, or the law should imply such warranty from the circumstance of the case and the nature of the thing sold, or unless the seller should be guilty of fraudulent misrepresentation or concealment in respect to a material inducement to the sale.

CAVEAU, a convivial and literary association in Paris, so called from meeting in a cavern known as "the cave." It was started in 1728, and continued about ten years. Dinners were given on the first Sunday in each month, which were attended by Helvétius, Crebillon, and other celebrities. The Caveau Moderne was started in 1806, and had dinner on the 20th of each month at the Rocher de Cancale. The association declined, but was reorganized in 1834, and in 1866 Jules Janin was received as a member. The meetings are now more formal and academical than convivial.

CAVEDONE, JACOPO, 1577-1660; an Italian painter, educated in the school of Caracci, and workman under them in the churches of Bologna. His chief productions are "The Adoration of the Magi;" "The Four Doctors;" "The Last Supper;" and especially "The Virgin and Child in Glory," now in the Bolognese academy. He was at one time an assistant to Guido, in Rome. In his declining years he was broken down by the loss of a favorite son, and finally died in extreme poverty in a stable at Bologna.

CAVELIER, PIERRE JULES, b. 1814; a French sculptor, who studied under David d'Angers and Delaroche. He first gained celebrity about 1842 by a statue of "Penelope," for which he received the medal of honor and three years' pension. A few years later he became a member of the institute. Among his other works are "Truth," in the Louvre, a statue of Abelard, and busts of Napoleon, Ary Schaffer, and Horace Vernet.

CAVENDISH, THOMAS, 1560-92; the third circumnavigator of the globe. He studied for a brief period at Cambridge, but left without a degree, followed the court, and soon squandered his inheritance, to repair which he turned to maritime adventure, and fitted

out a ship that accompanied sir Richard Grenville's expedition to Virginia in 1585. In July, 1586, he sailed from Plymouth with three vessels on a predatory expedition, passed through the straits of Magellan, cruised along the west coast of South America and Mexico, and burned or sunk 19 vessels, among which was the *Santa Anna*, belonging to the king of Spain, and having an immensely valuable cargo, which he seized off California. He returned to Plymouth Sept. 9, 1588, with his plunder, having gone around the globe in 2 years and 50 days. When he came home it was said that his seamen were clothed in silk, his sails were of damask, and his topmast was covered with cloth of gold. Within three years he wasted his wealth, and was under the necessity of making another voyage, which was disastrous, his crew rebelling after leaving the straits of Magellan and compelling him to return to England. This so dispirited him that he died on the voyage.

CAVENDISH, Sir WILLIAM, 1505-57; brought up in the family of cardinal Wolsey, whom he served as gentleman-usher of the chamber. He was present at the death of the cardinal, and delayed his attendance at court to see the remains of his patron properly cared for. The act so pleased Henry VIII. that he made Cavendish a member of his household, treasurer of his chamber, and a privy councilor, subsequently adding the dignity of knighthood. He filled other offices, and obtained grants of valuable lordships in Hertfordshire. His great property became the foundation of the immense estates of the dukes of Devonshire. He seems to have retained favor through the reigns of Edward VI. and Mary. He was the author of *The Life and Death of Cardinal Wolsey*.

CAVENDISH'S EXPERIMENT. See EARTH, *ante*.

CA'VERY, or CAU'VERY, a river in India, rising about 12° 25' n., and 75° 34' e., and flowing s.e. to the bay of Bengal. It is about 470 m. long, but navigable only for small boats.

CAVIA'NA, an island of Brazil, in the mouth of the river Amazon, about 35 m. long by 20 wide; fertile and well-stocked with cattle. The little town of Robadello, on the s.e. coast of the island, is almost exactly under the equator.

CAWDOR, or CALDER, a parish in co. Nairn, Scotland, noted as the site of Cawdor castle in which Shakespeare places the murder of Duncan by Macbeth. But the murder took place 400 years before the castle was built—which may prove that Shakespeare was "not for a day but for all time." During the rebellion of 1745, lord Lovat was for a time concealed in this castle.

CAXAMAR'CA, or CAJAMARCA, a Peruvian city, the capital of the province of the same name, on the e. side of the Andes, in a fertile valley at an elevation of more than 9,000 ft. above tide, 7° 7' s. and 78° 31' w.; 52 m. n. n.e. of Truxillo. The streets are regular, but most of the houses are of clay. There are two or three fine churches, a monastery, a nunnery, and the remains of the palace of Atahualpa, the last of the Incas of Peru, who was murdered there by the Spaniards in 1533. Near the city are the sulphur springs of Pultamarca, called "the Inca's baths," which have a temperature of 156° and are much frequented. There are manufactures of wool, linen, steel, silver, etc., and a good trade with Truxillo. A railway connects C. with the port of Pacasmayo. Pop. 12,000.

CAXI'AS, a t. in Brazil on the river Itapicuru, about 300 m. s.e. of Maranhao. It is a place of large trade in rice, cotton, cattle, etc.

CAYAM'BE or CAYAMBE-URCU, a peak of the Andes, 45 m. n.e. of Quito, in Ecuador. It is of regular conical shape, 19,540 ft. high, and always capped with snow. It is especially notable for being situated almost exactly under the equator.

CAYCOS, or CAICOS, or THE KEYS, four of the Bahama islands, in the Atlantic, between 21° and 27° n., and about 72° west. Great Key is 30 m. long. Little and North Keys and Providence island are smaller.

CAYLEY, Sir GEORGE, 1733-1857; an English physicist and inventor, whose experiments on the steam engine resulted in the invention of the air engine. Among his other inventions was an arrangement for applying the power of electricity to machinery. He was one of the originators of the London polytechnic institution, and late in life was a member of parliament for Scarborough.

CAYLUS, ANNE CLAUDE PHILIPPE DE TUBIÈRES, Count de, Marquis d'Esternay, Baron de Bransac, 1692-1765. When young he served with distinction in the French army, but after the peace of Rastadt (1714) he traveled extensively in Europe and the east, studying and collecting antiquities, on which he published several works. He rediscovered the method of encaustic painting with wax, mentioned by Pliny. He was also an engraver, and copied many of the famous pictures of the old masters. But he is best known as the author of several romances, humorous pieces, and fairy tales.

CAYLUS, MARTHE MARGUERITE DE VILLETTE DE MURCAY, Marquise de, 1673-1729; a descendant of the family of D'Aubigne, but converted by Mme. Maintenon to the Roman Catholic faith. She acquired celebrity as one of the leaders of court society. Racine so admired her abilities that he wrote the prologue to his tragedy of *Esther* as a compliment to her. Her first husband, the marquis de Caylus, was worthless and dissipated. After his death, she became the mistress of the duke of

Villeroi, for which she was sent away from the court; but after the death of Mme Maintenon she was restored to favor. Voltaire edited her *Souvenirs*.

CAYUGA, a co. in w. central New York, extending from lake Ontario half way across the state, intersected by the New York Central and several other railroads; 751 sq. m.; pop. '75, 62,434. It is a fine agricultural section, with undulating surface. Gypsum, salt, and limestone are among the minerals. Near the center of the co. lies Owasco lake, about 10 m. long, and on the w. border is Cayuga lake. The chief productions are wheat, corn, oats, barley, potatoes, hay, butter, wool, and tobacco. Co. seat, the city of Auburn.

CAYUGA LAKE, a fine navigable sheet of water in w. central New York, 38 m. long, and from 1 to 3½ m. wide. At the n. end it is shallow, but in some places it is very deep. It is 377 ft. above tide water, and 146 ft. higher than lake Ontario, into which it empties through Seneca river. The lake is much frequented by tourists and pleasure seekers.

CAYUGAS, one of the Indian tribes forming the Six Nations in New York. They built the villages around Cayuga lake in central New York, and, when first known by the French explorers from Canada, were able to muster several hundred warriors. The C. were, with the other Iroquois, against the French in the wars of the 17th century. A few of their chiefs became Christians; and one who was taken in war and sent to the galleys in France, on his return to Canada became a friend of the white man. In the American revolution they were on the English side. After peace, they ceded nearly all their lands to the state except a small reservation, and that they abandoned about 1800, when some of them went to the Senecas, some to Canada, and others to the Indian country. Scarcely 200 of the tribe now remain.

CAZEMBE (*ante*), the hereditary name of an African chief, whose territory is s. of lake Moero, and n. of Bangweolo, between 11° and 9° s.; 120,000 sq. m.; pop. 500,000. The country forms a hollowed plain, and is watered by numerous rivers, among the most important of which is the Luapula, which is supposed to be one of the head streams of the Congo. The population consists of two races, the Messiras and the Campololas, of whom the former are natives subjugated, and the latter intruders and rulers; they alone being eligible to office, and theirs being the language of the court. Some attention is paid to agriculture, and millet, maize, manioc, sugar-cane, yams, gourds, and bananas are grown. The horse and the ass are unknown animals; sheep are scarce, but cattle are abundant. Salt is an important article of trade, and coarse cotton cloth, earthenware, and iron goods are the chief manufactures. The exports are slaves, ivory and copper-ore. The chief, or cazembe, has despotic power, and uses it barbarously. He has 600 wives, and the great nobles take as many as they can afford to keep. The capital is moved whenever a new ruler is put in power. The country of the Cazembe was first visited by white men in 1796. It has not yet been explored to any considerable extent.

CAZENOVIA, a village and township in Madison co., N. Y.; pop. '75, 4,240. The village is on Cazenovia lake, and is reached by the Cazenovia and Canastota railroad. There is a Methodist seminary in the place.

CAZOTTE, JACQUES, 1720-93; a French author, educated by the Jesuits. He produced at first a mock romance and a coarse song which became so popular that he undertook something more respectable and brought out his *Roman d'Olivier*. This was followed with *Le Diable Amoureux*, and another sportive creation. He also continued Voltaire's *Civil War in Geneva* with such close similarity that no one doubted the work to be that of Voltaire. Cazotte next took a wide departure, embraced the views of the Illuminati, and declared that he possessed the power of prophecy. He adhered to the royal cause, in consequence of which he was arrested by the revolutionary tribunal and executed.

CEBES, a Greek philosopher, disciple of Socrates, mentioned by Plato and by Xenophon as distinguished for virtue and love of truth. The work *Tabula Cebetis* attributed to him professes to be an explanation of an allegorical picture, and begins with the Platonic doctrine that men enter the earth from a pre-existent state, in which they were taught how to guide their course in this world; but the draught of oblivion, which all must drink, though not in equal quantities, causes them to forget the instructions. Many allurements entice them to vice, but by patience and endurance they may attain to virtue and happiness. Sciences are declared not to be the true discipline, but yet to be useful, especially as restraint for the young.

CEBU, a city on the island of Cebu, one of the Philippines, 400 m. s.e. of Manila. Cebu is the oldest provincial town in the archipelago, and still ranks as one of the best built, while its position makes it the chief commercial center for the southern Philippines. It is the residence of a military governor, and an alcalde, as well as the governor-general of the Vissagas. There are exports of sugar, hemp, tobacco, Japan-wood, etc. The grave of Magellan, the navigator, is on the island of Matan, opposite the town. Pop. inclusive of the suburb of St. Nicholas, about 34,000.

CEBU, or ZEBU, one of the Philippine islands, between $9^{\circ} 35'$ and 11° n., and 123° and $123^{\circ} 50'$ e.; about 1200 sq.m. The surface is rough, and the soil not suited to agriculture, though there are fertile valleys producing cotton, sugar, rice, tobacco, and cocoa. The climate, though very hot, is salubrious.

CEC'CO D'ASCOLI, 1257-1327; the popular name of FRANCESCO DEGLI STABILI, a mediæval poet and encyclopædist. He studied mathematics and astrology, and was professor of the latter science in the university of Bologna. Having published a commentary on the sphere of John de Sacrobosco, in which he propounded bold theories concerning the employment and agency of demons, the clerical party caused him to be condemned to certain fasts, prayers, and fines; but he eluded punishment by going to Florence. His free-thinking and plain-speaking, however, raised up many enemies; he had attacked Dante's *Commedia* and his fate was sealed; an old accusation of impiety was renewed, and he was tried, sentenced, and burnt at the stake in Florence, in the 70th year of his age.

CECIL, a co. in n.e. Maryland, on the Delaware and Pennsylvania border, intersected by three railroads; 300 sq.m.; pop. '70, 25,874—4,014 colored. It has an uneven surface and fertile soil, its products are wheat, corn, oats, potatoes, hay, butter, and wool. Of stone and minerals there are granite, gneiss, slate, iron, chrome, and sulphate of magnesia. There are flouring mills, and several other manufactories. Co. seat, Elkton.

CECIL, RICHARD, 1748-1810; a minister of the church of England, celebrated as a pulpit orator. His works have been published in England and in New York. They are prized for deep spiritual fervor.

CECRO'PIA MOTH, *Platysamia cecropia*, the largest moth of the United States; belonging to the family bombycidae, it is akin to the silk-worm. Its larva grows to be between 3 and 4 in. long, and is a most beautiful object; its color is a tender green, shading into blue upon its sides; on its head it wears an amber-colored knob raised upon a short stem, and armed with short black points; rows of smaller knobs adorn the back and sides, those along the sides being turquoise blue; the foremost four on the back are amber-colored. The larva feeds upon nearly all kinds of fruit trees, the maple, willow, and some other trees. It spins a large cocoon, sometimes attached to the under-side of a twig, when it is closely woven and tapers to a point at each end; sometimes in the space between forking limbs, when it is loosely made, and is often as large as a goose-egg. The outer and inner surfaces of the cocoon are somewhat condensed, so that there appear to be two cocoons or coverings. In the earlier stages of the spinning, the insect often thrusts the silk in loops through the openings between the threads, and these loops make it difficult to reel the silk; by dissolving in an alkali the gum which the insect exudes to harden the cocoon, and by using great care, it is possible to reel the silk, but it is dark and coarse, and would be fit for only coarse and strong fabrics. It has been carded and spun. The larva does not thrive in confinement, but might be cultivated in the open air with a little pains. The moth appears in June; its wings expand from 5 to 7 in.; its general color is dark brown thickly powdered with gray; the borders of the wings are clay-colored, and each wing bears a light gray kidney-shaped spot, bordered with lines of red and black. The antennæ of the males are particularly large and fine, the main stem being feathered on each side with long branches in pairs. Like other lepidopterous larvæ, the cecropia is preyed upon by various parasites, two species of ichneumon flies being notable.

CEDAR, a co. in e. Iowa, watered by Cedar and Wapsipicon rivers, and intersected by the Chicago, Rock Island and Pacific, and the Chicago and Northwestern railroads; 576 sq.m.; pop. '70, 19,731. The surface is divided between woodland and prairie; the productions are mostly agricultural. Co. seat, Tipton.

CEDAR, a co. in s.w. Missouri, on Sac river; 435 sq.m.; pop. '70, 9,474—111 colored. The surface is uneven, but the soil is productive. Agriculture is the chief business. Co. seat, Stockton.

CEDAR, a co. in n.e. Nebraska, on the Missouri river, watered chiefly by Dow creek; 650 sq.m.; pop. '70, 1032. It is an agricultural region, but as yet not much cultivated. Co. seat, St. James.

CEDAR CREEK, a stream in Shenandoah co., Va., falling into the Shenandoah river. On this creek, Oct. 19, 1864, the confederates, under gen. Early, surprised Sheridan's (union) camp, during that officer's absence. The unionists were compelled to retreat. Gen. Sheridan, who was at Winchester when he heard of the disaster, hastened to the front, and, rallying his forces, in turn surprised the confederates who had stopped to plunder the union camp, recovered nearly all that had been lost, took 2,000 prisoners, and 50 pieces of artillery, and the next day cleared the valley of the Shenandoah of confederate troops. This brilliant achievement was the theme of T. Buchanan Read's stirring poem, *Sheridan's Ride*.

CEDAR FALLS, a city in Black Hawk co., on Cedar river and the Iowa division of the Illinois Central, at the intersection of the Burlington, Cedar Rapids and Minne-

sota railroads, 93 m. from Dubuque. It is a manufacturing place of importance Pop. 80, 3,035.

CEDAR MOUNTAIN, a hill in Culpepper co., Va., near which, Oct. 8, 1862, there was an engagement between the federal forces under gen. Banks and the confederates led by gen. Jackson. The confederates had the advantage and held the field, but two days later fell back towards Gordonville to join gen. Lee. The reported losses were: On the union side, 1400 killed and wounded, and 400 prisoners; of the confederates, 1283 killed and wounded, and 31 missing.

CEDAR RAPIDS, a city in Linn co., Ia., on Red Cedar river, and the Burlington, Cedar Rapids, and Minnesota railroad, at the intersection of the Iowa division of the Chicago and Western railroad, and the junction of the Dubuque and Northwestern railroad. There are many important manufactories in and near the place. Pop. 5,940.

CEDAR, or RED CEDAR, RIVER, rises in s.e. Minnesota, and flows s. and s.e. through more than three quarters of the breadth of Iowa, falling into the Iowa river about 20 m. e. of the Mississippi. The entire length is about 350 miles.

CEDAR SPRINGS, a village in Spartanburg co., S. C., formerly a popular watering-place. It is now the seat of a deaf and dumb asylum. The village is on the Spartanburg and Union railroad.

CEDRON, an extract of a bitter nature from a small tree growing in Central and South America. In those countries the bitter is thought to be a remedy for the bite of serpents, and a prophylactic against hydrophobia. In medical practice it is used as a simple bitter principle.

CEFALU', a seaport in n. Sicily, 39 m. e.s.e. of Palermo; pop. 10,200. The new town, founded in 1131 by Roger I. of Sicily, is at the base of a steep promontory which overlooks the magnificent bay of Cefalu. The houses are well built, and the cathedral, begun in 1132, is distinguished for the beauty of its façade, with antique pillars and mosaics. There is a small but good harbor, and some trade in manna, oil, and sardines; but most of the people are engaged in the sea-fishery.

CEL'EBES (*ante*), was first discovered by the Portuguese in the early part of the 16th c., the exact date being given by some authors as 1512. At that time the Macassars were the most powerful people in the island, having successfully defended themselves against the king of the Moluccas and the sultan of Ternate. In 1609, the English endeavored to gain a foothold. The Dutch arrived near the end of the 16th or the beginning of the 17th century. In 1611, the Dutch East India company obtained a monopoly of the trade on the island of Buton, and in 1618, an insurrection in Macassar gave them an opportunity of obtaining a definite settlement in Celebes. In 1660, the native kingdom was forcibly subjugated by the Dutch, with 33 ships, and 2,700 men. Six years later, the war began again, but was ended in 1667, and a treaty was signed by which the Dutch were recognized as protectors and mediators of the different states who were parties to the treaty. In 1683, the n.e. part of the island was conquered and put under the command of the governor of the Moluccas; and in 1824, the kingdom of Boni was reduced. Since that time there has been no important military event except the speedily suppressed insurrection in Boni in 1859. The island is very irregular in outline, and has been compared to a star-fish with its limbs torn away from the w. side. There are few rivers, and none are navigable for any considerable distance; but the lakes are numerous, and some of them large. The most important of these is the Tamp-arang-Labaya, or Tenpe, in the s.e. section of the peninsula. It has a depth of 30 ft., and is richly stocked with fish. The scenery throughout the island is varied and picturesque. There are wonderful gorges, chasms, and precipices, many of the latter 600 ft. high, and yet covered with a tapestry of vegetation. Much of the country is still covered with the primeval forest, which is traversed here and there by scarcely perceptible paths, or broken by occasional clearings or villages. The fauna of Celebes exhibits some specimens peculiar to the island. Of 200 species of birds, 80 are not elsewhere found. There are only 14 species of mammalia, and of these 11 are almost entirely confined to the area. The most remarkable of these are an ape found in but one other country, a small ox-like quadruped that inhabits the mountainous districts, and the pig-deer of the Malays. Neither the elephant, the tapir, the rhinoceros, nor any large beast of prey is represented. Not much attention has been given to agriculture, except where the Dutch influence and example are strong; and manufactures are few and crude. The women weave a tolerable cotton cloth. The houses are of wood and bamboo, and are usually very frail. The whole of Celebes is practically in the hands of the Dutch government, though but a comparatively small portion is under their direct administration, and many of the petty princes are permitted to manage their internal affairs much as they please. For administrative purposes there are three "residences." Celebes, Manado, and Ternate, the former two belonging solely to the island, while the third includes a large part of the Moluccas. The most important and interesting people in the island are those in the department of Macassar. They consist mainly of Macassars and Malays proper, of Endinese from the island of Flores, and immigrants from the neighboring kingdom of Wadjo. The foreign colonies are each under the management of a separate captain, and the Malays are under the care of a head priest. The Macassars belong to the Malay race; they are well built

and muscular; with dark brown complexion, a broad and expansive face, black and sparkling eyes, high forehead, nose rather flat, large mouth, and black soft hair which they let fall over their shoulders. The women are sprightly, clever and amiable, and formerly brought large prices as slaves. The men are brave, ambitious, jealous, and revengeful, but not treacherous. Drunkenness is rare, but gambling and cock-fighting are passionately engaged in. Running "amok" was once so common that the Dutch dismissed the Macassar soldiers from their service to break up the evil. They take great pleasure in all bodily exercise. In religion they call themselves Mohammedans, but their worship is full of pagan superstitions; they worship animals and a divinity called Kareng Lové, who has power over their fortune and health. Their language, which belongs to the Malayo-Javanese group, is spoken by about 300,000; but it has a much smaller area than Buginese, which is the language of Boni. Their literature is poor, and consists mainly of romantic stories from the Malay, and religious treatises from the Arabic. Of their few original works the most important are the early histories of Goa, and some other states of the Celebes, and a collection of laws and maxims of the old princes and sages. In no part of their possessions, however, have the Dutch made more important transformations than in Minahassa, or the confederation of Manado. At the beginning of the century the people were still savages, and in almost continual warfare among themselves. About 1822, it was discovered that the soil of the mountain sides was very favorable for growing coffee; the cultivation was introduced, and a system established by which the native chiefs undertook the management of the plantation. The result has been not only to make one of the best coffee districts in the archipelago, but wonderfully to advance the civilization of the inhabitants. Missions and education have been successful; villages of handsome houses have grown up; the country is traversed by roads shaded by trees, and rivers have been bridged. The trade of the district is in a flourishing condition, and promises to become still more important. The coffee plant produces a fine kernel of transparent greenish-blue color, and brings a much higher price than that from Java. Besides other large district divisions, for the most part physically similar to those described, there is the district or state of Toradja, lying entirely inland, which is in possession of a wild pagan race who shun intercourse with other races, and are generally regarded as the aborigines of the island.

CEL'ERES, a body-guard of 300 young men of the best Roman families, organized, according to tradition, by Romulus. Next to the king, their leader was the highest officer of the state. This position was held by Brutus when he expelled the Tarquins.

CÉLESTE, MADAME, b. 1814; a dancer and melodramatic actress of French descent, and a pupil of the Paris conservatory. She came to the United States about 1829, and not long after married a man named Elliot. After his death she went to England, and in 1830 began a career of remarkable success in the sensational drama of *The French Spy*. She made two other American tours, 1851 and in 1865. In 1866, she returned to England and retired from the stage.

CEL'ESTINE, the name of five popes. 1. SAINT CELESTINE, d. 432, is supposed to have been a near relative of the emperor Valentinian. He held the council of Ephesus in 431, at which the Nestorians were condemned; actively persecuted the Pelagians; struggled for Roman orthodoxy; sent Palladius to Scotland, and Patricius (St. Patrick) to Ireland; raged against the Novatians in Rome, imprisoning their bishop, and forbidding their worship, and was intolerant of the least innovation of the constitutions of his predecessors. His papacy lasted nearly 8½ years. 2. GUIDO DI CASTELLO, chosen in 1143; d. 1144, after a reign of 5 months and 13 days. He gave absolution to Louis VII. of France, on the king's humble subjection, and removed the papal interdict from that country. 3. GIACINTO BOBONE ORSINI, elected Mar. 30, 1191; d. 1198, after ruling nearly 9 years, and was buried in the Lateran; supposed to have been 90 years old when chosen. He crowned the emperor Henry VI. of Germany, and subsequently excommunicated him for keeping Richard I. of England in prison. In 1192, he confirmed the statutes of the Teutonic order of knights. 4. GOFFREDO CASTIGLIONE of Milan, a nephew of Urban III. He was elected pope by only seven cardinals, Sept. 22, 1241, and occupied the chair only 17 days, dying Oct. 8, before he was consecrated. He was the author of a history of Scotland, in which country he was once a monk. 5. PIETRO DAMORONE, the son of a peasant of Naples; became a Benedictine monk, and lived many years in caves after the manner of John the Baptist. Terrible stories are told of the severity of his penitential discipline. During his hermit life he founded the order that bears his name (see CELESTINES, *ante*). After the death of Nicholas IV he was elected pope, but refused to accept until persuaded by a deputation of cardinals reinforced by the kings of Naples and Hungary. He was chosen July 7, 1294, was crowned Aug. 29. He issued two decrees; one confirming that of Gregory X. ordering the shutting up of the cardinals when in conclave, and one declaring the right of any pope to abdicate at pleasure—a right which, after ruling 5 months and 8 days, he exercised, Dec. 13, 1294. In his document of renunciation he assigned as the moving causes "the desire for humility, for a purer life, for a stainless conscience; the deficiencies of his own physical strength; his ignorance, the perverseness of the people, and his longing for the tranquillity of his former life." Having divested himself of every outward symbol of dignity, he returned to his old solitude; but he was not permitted to remain: his

successor, Boniface VIII., sent for him, and, despite his efforts to escape, imprisoned him in a castle, where, after languishing ten months in the infected atmosphere, he died, May 19, 1296. He, like the first of the name, is recognized as a saint by the Roman church.

CELLARER, a person under the Roman emperors who supervised the domestic affairs of the household and examined accounts. The same title was given in later times to the purveyors for monasteries or priests. As an officer of a monastery the C. regulated every matter affecting provisions.

CELLULOID, a remarkable modern invention, apparently capable of wide usefulness, wherever India-rubber and various kinds of cloth are now employed. Celluloid is produced by mixing gum camphor with a pulp of gun-cotton, and subjecting the combination to a high degree of pressure and heat. The result is a hard product of extraordinary toughness and elasticity. It can be made plastic again and molded into any required form. Any color can be given to it by the use of coloring matter during the process of manufacture. It is extensively used as a substitute for ivory, which it resembles so closely that it is sometimes difficult to detect the difference. It is said to equal ivory in strength and elasticity, and not to warp or discolor with time. It has proved a good material for piano and organ keys, billiard-balls, backs of brushes, looking-glass frames, handles for knives, forks, umbrellas, and many other articles. It is much cheaper than ivory, and is claimed to be better for decorative purposes. It is also used with much success to imitate tortoise-shell, malachite, amber, pink coral, and other costly materials. In imitation of tortoise-shell, it is made into combs, napkin-rings, match-boxes, card-cases, etc. Imitations of pink coral jewelry are made and sold at prices much below those of the genuine. The same is true of imitations of malachite and amber. Mouth-pieces for pipes, cigar-holders, etc., are common. It is also used as a substitute for porcelain in making dolls' heads. The frames of eye-glasses, opera-glasses, and spectacles are made of it. More recently it has come into use in combination with linen, cotton, or paper, for shirt bosoms, cuffs, and collars. The material has a hard glistening surface, like that of newly laundered linen; is elastic and impervious to moisture, and when soiled can be renovated with a moistened sponge. There seems to be some danger in the manufacture of C. Though there have been explosions and several persons killed in one of the manufactories, it is said that with due care, and avoidance of unwarrantable experiments, the manufacture is not unsafe.

CELSIUS, ANDERS, 1701-44; a Swedish astronomer, b. at Upsala. He traveled in Germany, France, Italy, and took part in the expedition of 1736 led by Maupertius and others to measure a degree of latitude in Lapland. C. was a member of the academies at Stockholm and Berlin, of the British royal society, and secretary of the royal society of Upsala. Among his works are *Observations on the Measurement of the Earth*, and *A New Method of Measuring the Distance of the Sun from the Earth*, in which he endeavored to show that the waters of the ocean are decreasing in volume.

CEMETERY (*ante*). The famous Père la Chaise, in Paris, is the most celebrated of modern cemeteries, although by no means the largest. It was laid out in 1804, and comprises about 200 acres, and more than 16,000 monuments erected to the memory of nearly all the great men of France of the present century. Twice this C. and the neighboring heights have been the scene of desperate fighting. In 1814, during the attack on Paris by the allies, it was stormed by a Russian column; and in 1871 the communists made their last stand among these tombs, where 900 of them were killed, 200 being buried in quicklime in one huge grave, and 700 in another. Paris has also the cemeteries of Mont Parnasse and Montmartre, besides many smaller burial-grounds. In 1874, a very large C. was laid out 16 m. n. of Paris, covering nearly 1300 acres. In France, every city and town is required by law to provide a burial-ground beyond its barriers, properly laid out and planted, and each interment must take place in a separate grave. This law does not apply to Paris, however. There the dead are buried 40 or 50 at a time in the *fosses communes*, the poor being interred gratuitously, and a charge of 20 francs being made in all other cases. The *fosse* when full is left undisturbed for 5 years; then all the crosses and other memorials are removed, the level of the ground is raised 4 or 5 ft. by fresh earth, and interments begin again. For 50 francs a grave can be leased for 10 years; but when permanent monuments are desired the ground must be purchased in fee.

In English cities, about 1840, the people began to discuss the dangers to public health arising from the condition of the grave-yards surrounding, and the vaults within and underneath, the great churches. In London, these receptacles were literally crammed with coffins, and the surrounding air was infected to a dangerous degree. Coffins were piled upon each other until they came within a few inches of the surface of the ground, and then the ground was raised from time to time until its level came nearly up to the lower windows of the church. To make room for new burials, old bones were thrown out, and this led to systematic robbing of graves for the sake of the coffin plates and the pretty ornaments sometimes buried with the bodies. The result of this action and discussion was an entire change in the system. Burials within the limits of cities and villages were prohibited, and as a necessity rural cemeteries were founded. The chief cemeteries of London at present are: Kensal Green, on the Harrow road, 2½ m. from

Paddington; Highgate, on a slope of Highgate hill; Abney Park; the Norwood and Nunhead cemeteries, on the s.; the west London C., at Brompton; Ilford and Leystone cemeteries in Essex; the Victoria and Tower Hamlets cemeteries in e. London; while farther from the city were the cemeteries of Woking and Colney Hatch.

The dead-houses (*Leichenhäuser*) of Frankfort and Munich form a remarkable feature of the burial customs of those cities. The objects of the founders were to obviate the remotest danger of premature interment, and to provide a respectable place for the reception of the dead, in order to remove the bodies from the often confined dwellings of the friends. At Frankfort, the dead-house is at the entrance to the cemetery. It consists of a warder's room, where an attendant is always on duty; on each side are five rooms, well ventilated, and kept at even temperature, and each one is furnished with a bier, on which a corpse can be laid. On one of the fingers of a corpse is placed a ring, to which is attached a light cord, connecting with a bell which hangs outside of the attendant's room. Bodies deposited here are inspected at regular intervals by a medical officer, and the warden is always on the watch for the ringing of the bell. The importance of this care was once proved at Frankfort by the revival of a child. The attendants are required to receive and treat the dead with all respect, and no interment is permitted until signs of decomposition appear. The relations are then notified, and a funeral is held. Similar mortuaries have been established in many English towns.

Of the cemeteries still in use in southern Europe, the catacombs of Sicily are the most remarkable. In one of these, near Palermo, under an old Capuchin monastery, there are four subterranean corridors, in which more than 2,000 corpses are ranged in niches in the wall, many of them shrunk into the most grotesque attitudes, or hanging with pendent heads or limbs from their receptacles. As a preparation for its niche, the body is desiccated in an oven, and then dressed as if in life and put in its place in the wall. At one end of this C. there is an altar, strangely ornamented with a mosaic of human skulls and bones.

Among nations in the east cemeteries have been in use from the earliest times. In China the high grounds near Macao and Canton are crowded with tombs, many of them in the form of small tumuli with a low encircling wall, like the ringed barrows of western Europe. But the most picturesque of all cemeteries are those of the Turks. From them it was, perhaps, that the first idea of the modern C., with its ornamental plantations, was derived. Around Constantinople the cemeteries form vast tracts of cypress woods, under whose branches stand thousands of tombstones. A grave is never reopened; a new resting place is given to every one, and so the dead now occupy a wider territory than that which is covered by the homes of the living. The Turks believe that until the body is buried the soul is in a state of discomfort, and the funeral, therefore, takes place as soon as possible after death. No coffin is used; the body is laid in the grave, a few boards are placed around it, and then the earth is shoveled in, care being taken to leave a small opening extending from the head of the corpse to the surface of the ground, an opening not unfrequently enlarged by dogs and other beasts which plunder the graves. A tombstone of white marble is then erected, surmounted by a carved turban, in case of a man, and ornamented by a palm branch in low relief, if the grave be that of a woman. The turban by its varying form indicates not only the rank of the sleeper below, but also the period of his death, for the fashion of the Turkish head-dress is always changing. A cypress is usually planted beside the grave, its odor being supposed to neutralize any noxious exhalations from the ground, and thus, every C. is a forest, where by day hundreds of turtle-doves are on the wing or perching on the trees, and where bats and owls swarm undisturbed at night. These cemeteries are a favorite resort for Turkish women, some of whom are always to be seen praying beside the narrow openings that lead down into a parent's, a husband's, or a brother's grave. The cemeteries of the Armenians abound in bas-reliefs, which show the manner of the death of the person beneath, and on these singular tombstones are frequent representations of men being decapitated or hanging on a gibbet.

America closely followed England in the sanitary reform of burial-places, and many years ago burial within certain limits of cities was prohibited except in special cases, such as the use of private vaults in church-yards. The earliest of the great cemeteries in the United States was Mount Auburn, near Boston, covering 125 acres, lovely by nature, and most elaborately adorned.

Laurel Hill C., in Philadelphia, was opened in 1836. It is on the Schuylkill river, about 4 m. n. of the center of the city, and is part of a region of romantic beauty, abounding in gentle declivities, picturesque lawns, rugged ascents, rocky ravines, and flowery dells. A carriage drive, along the river front, connects Fairmount park and the Wissahickon; thus bringing the ever-varying activity of the living into association with the tranquil resting-places of the dead. Since the first purchase of ground, several larger tracts have been added to it; while, under the management of various associations, other portions of the beautiful vicinity have been, in a similar manner, consecrated and adorned. This was followed by Greenwood C., the first and one of the greatest popular burial-places for New York and Brooklyn. The company was chartered in 1838. The grounds, which comprise 450 acres, occupy the hills and valleys on the e. side of the bay of New York, about 3 m. s. of the city hall in Brooklyn. The situation is one of the finest in all the region. From the higher points of the

C. the eye takes in the two cities of New York and Brooklyn, the bay, half a dozen cities in New Jersey, the far-off Palisades, the broad lower bay, the highlands near Sandy Hook, Coney island, the rich garden lands of Kings county, and a grand view of the Atlantic ocean. This C. has five entrances; nearly 20 m. of stone-bedded avenues, and 17 m. of concrete paths. Water for drinking and irrigation is supplied from the city works to nearly 40 hydrants. There are eight lakes of varying dimensions, and four ornamental fountains. The grounds are drained by 17 m. of subterranean sewer pipes, with 1140 receiving basins. There have been 23,000 lots sold, and over 200,000 interments made, the first one on the 5th of Sept., 1840. Among the edifices and monuments of note are: the entrance buildings, the receiving tomb, the shelter house, and the following monuments and statues: to Horace Greeley, statue of a printer setting type; to John Matthews, a sarcophagus with marble effigy; of the Brown brothers, representing the loss of the steamship *Arctic* and the loss of five members of the family; on Highwood hill, a tribute to Samuel B. Morse, inventor of the telegraph; the Firemen's monument, a fireman rescuing a child; monument to Henry Howard, ex-chief of the New York fire department; chapel monument to Mary M. Danser, noted for charitable bequests; marble temple of A. S. Scribner, of fine Italian marble, containing a figure of *Hope*, under a marble canopy, supported on eight pillars, and on the sides, in bas-relief, illustrations from the life of Christ, from birth to ascension; monument to Thomas J. Read, a granite figure of *Faith Clasp ing the Cross*; statue of John Correja, a sea-captain taking an observation with the sextant (put up by himself many years before his death); the monument to Charlotte Canda, who was killed on her 17th birthday by falling from her carriage. (This is an elaborate Gothic temple, and was for many years the great attraction of the place; more people have visited this structure, probably, than any other of the points of interest.) The Soldiers' monument, in honor of those who fell in the union cause during the rebellion, with four life-size statues representing the different branches of the service; the Pilots' monument, to Thomas Freeborn, who lost his life in trying to save the ship *John Minturn*, in 1846; the statuary group of James Gordon Bennett, founder of the New York *Herald*, of the finest Carrara marble, representing a life-sized female figure, kneeling on a cushion, in an attitude of prayer, commending to the Almighty Giver her child held in suspense by an angelic figure; the colossal bronze statue of De Witt Clinton; monument to Louis Bonard, who was one of the founders of the society for the prevention of cruelty to animals. This C. is not a stock corporation, but a public trust, managed by trustees chosen by the lot owners.

CENIS, MONT (*ante*), the site of some remarkable railroad building within the last 15 years. In 1865, an English engineer obtained permission from the Italian and French governments to lay a railway on the line of Napoleon's carriage road over the mountains. The road was built in the ordinary way with the addition of a third rail midway between the outer ones, and raised nearly a foot higher. This third rail was strongly gripped by the driving wheels, by which means the trains could safely traverse very sharp curves and descend grades as steep as 1 ft. in 12. On the French side the rise to the summit in 6½ m. of road was 4,460 feet. Then there was a stretch of 5 m. nearly level, and after that the descent to Susa on the Italian side, a distance of 20 m. over curves so numerous and so sharp that the view changed almost every minute, trains descended by the momentum of weight, the speed being regulated by brakes. This road was superseded by the one now in use, which runs through the great tunnel. (See TUNNEL, *ante*.)

CENSORINUS, a chronologist and grammarian of the 3d c., known by a work called *De Die Natali*, in which he treated of man's generations, his natal hour, and the influence that the stars and genii exercise over his fate. It was by some work of his on chronology that certain important dates have been ascertained.

CENSUS (*ante*). The tenth C. of the United States was taken in June, 1880. Up to 1860 our decennial progress in population and material wealth had been uniformly rapid and wonderful. The war of the rebellion then interfered, and both directly and indirectly tended to arrest that progress—directly in the destruction, through war and disease, of more than three quarters of a million of men in the beginning of life, when, in the natural course of events, they would have largely increased the population; and indirectly in checking the flood of immigration, a flood that had been bringing us half a million inhabitants in a single year. The regularity of progress from 1790 to 1860 is very remarkable. The percentage of increase in each decade is here shown:

Decade.	Per Cent.	Decade.	Per Cent.
1790 to 1800.....	35.02	1830 to 1840.....	32.67
1800 to 1810.....	36.45	1840 to 1850.....	35.87
1810 to 1820.....	33.13	1850 to 1860.....	35.58
1820 to 1830.....	33.49	1860 to 1870.....	22.22

So, for the 70 years up to 1860 the population grew at an average rate of 3½ per cent per annum, dividing the whole period into periods of ten years each. Without the war the population of the United States in 1870 would have been 42,600,000; in 1880, by the same ratio, it would have been upward of 57,000,000.

The numbering of the people, though on one special occasion forbidden by the

highest power, is an ancient custom. Moses numbered the Israelites in the wilderness, and, in later times, Joshua and David followed his example. The Chinese tell of a C. of their people taken 2,043 years before the birth of Christ. In Japan an enumeration was made about 1,900 years ago. Solon ordered the C. of Athens to be taken, especially with reference to classes of the people and taxable property. Servius Tullius, sixth king of Rome, ordered a C., when every citizen had to appear on the field of Mars and declare on oath his name and residence, the number and names of his children, and the value of his property. Failing to do this, his property might be confiscated and himself scourged and sold for a slave. Augustus enlarged the scope and improved the manner of taking the census. In the 16th c. the church began to record births, marriages, and deaths, and from this practice gradually grew up the modern C., though there does not appear to have been any exact popular C. made until after the beginning of the 18th century.

Russia, then almost a barbarous country, appears to have led other nations in C. taking. Partial enumerations were made in 1700, 1704-5, and 1710. In 1719, Peter the great sent a commission into all the provinces to make a general census. This commission took account of the number of peasants, mechanics, domestics, and men unemployed. Women were not taken into account at all at the commencement, but they were recognized before the work closed, and in some districts were partially enumerated. In 1722, the C. distinguished the insane and infirm without means of subsistence, and the czar ordered that a C. should be taken every twentieth year. In 1802, a central bureau of statistics was organized, reorganized in 1852, and again in 1858. This bureau is charged with the taking of the C., which now includes much the same information as that obtained in the United States. Prussian enumerations were begun under Frederick William I., and improved by his successor. From 1748 to 1800, the C. was taken annually, except when prevented by war. In 1805, the central bureau of statistics was established. In 1834, a triennial C. was ordered. The schedules for questioning were very full, and the enumeration was to be made some one day in December. The first C. of the German empire was taken on the 1st of Dec., 1871. Austria first took a C. in 1754, and kept it up triennially until 1857, when it was enacted that the enumeration should be made every sixth year. In Sweden, as early as 1686, there was a law requiring the clergy to record marriages, legitimate and illegitimate births, deaths, persons removed from or settled in parishes, and all the population, arranged by place of habitation and households. Such information was first published in 1746. A statistical bureau was established in 1857, to collate and publish C. and other statistical information. Norway has kept up a decennial C. since 1815, and the work is usually thoroughly done. In Spain, enumerations were made in 1787, 1798, 1857, and 1860, and, by calculation, in 1867. The work is done by government officials in one night. Denmark had a C. once in five years, from 1840 to 1860; now it is decennial, the last enumeration being on the 1st of Feb., 1870. The first and only C. of Portugal was made Jan. 1, 1864, and extended only to the number of the population. Switzerland began enumerations about 1750. Her C. is now decennial. Belgium doubtless leads all nations in the fullness and accuracy of her statistics, although her C. is taken but once in ten years. The last was in 1876. The Netherlands C. is decennial. The last was taken Dec. 1, 1870. Italy has an enumeration once in ten years, the last Dec. 31, 1871. Greece counts up irregularly. From 1836 to 1845, a C. was made every year; then in 1848, 1853, 1856, 1861, 1868, and 1870. Turkey has never taken a C. except for conscription or taxation. The first C. on record in France was taken in 1700 and published in 1720. There was a general C. taken in 1800, and a decree of the national convention ordered that it should be continued every fifth year. Since about 1820, the C. has been taken very regularly. Brazil began in 1872, the Argentine Republic in 1869, Colombia in 1870, and Egypt in 1862.

The first real effort to record the population of Great Britain was made in 1801, and then it did not extend to Ireland, which had just become a part of the empire by the celebrated union. This C. was crude and unsatisfactory, and the returns were impossible of classification. The chief value of the C. of 1801 was in calling attention to the importance of such statistics and evoking better methods for getting and classifying them. Much better work was done in 1841 and 1851, when advantage was taken of the elaborate records of births, marriages, and deaths, which were begun the 1st of July, 1837. The first attempt at a general C. in Ireland was made in 1811, but it was a failure. Some improvements were made in 1821 and 1831, since which satisfactory enumerations have been made by the constabulary. We lack space to go over the enumerations in Great Britain and Ireland in 1841, 1851, and 1861, and must come directly to the first imperial C.—1871. This first attempted complete enumeration of the population of the empire was, so far as Great Britain and Ireland were a part, made in one day, April 3, 1871. The returns for the whole empire showed a population of 234,762,593, living upon 7,769,449 sq.m. of territory, viz.:—England and Wales, 22,856,164 population; Scotland, 3,392,259; Ireland, 5,449,186; islands in British seas, 147,470; colonies and possessions, 202,917,214. The annual rate of increase from 1861 was:—In England and Wales, 1.23 per cent; Scotland, 0.92; Ireland (decrease), 0.71. The work of this C. was in charge of the registrar-general, assisted by Dr. W. Farr and J. T.

Hamnick. The main work was done by 32,543 enumerators, employed under 2,195 registrars and 626 superintendent registrars. All the enumerators were required to be intelligent, trustworthy, and active; to write well, and to have some knowledge of arithmetic. They were to be not under eighteen nor over sixty-five, and to be in good health and of unexceptionable character. The whole country was divided into minute districts, and so great was the care taken, that every unnumbered house or dwelling had a fixed number put upon it before the schedules were sent out. Every means was taken through the press and by means of special publications to apprise the people of what was wanted, and instructing them how to facilitate the work. The householders' schedules were delivered in person by the enumerators who were to take them up. Every separate occupier received a schedule arranged so as to record the name, day, age, rank, profession or occupation, conjugal relation, relation to the head of the family and birth-place of every person who abode in any house on the night of Sunday, 2d of April, 1871. There were special blanks for blind, deaf and dumb, etc. There were 6,500,000 of these schedules, weighing 41 tons. In addition to schedules and enumeration books, there were sent from the central office 115 different printed forms of instructions and circulars. The houseless population were enumerated by the police, the navy by the admiralty, the merchant seamen by the customs bureau, and the army through the field-marshal's office. The tenacity of the Welsh tongue was shown by the return of 17,276 schedules filled out in that language. The care exercised in taking this enumeration may be inferred from the fact that the enumerators were instructed to consider a house as comprising all the space within the external and party walls of a building, whether occupied by one or several families; they were also instructed to make an exact record of each house and the number of schedules left. With the help of the police they were to return all persons not on that night dwelling in houses, but sleeping in barns, sheds, caravans or tents, or in the open air. Special schedules were printed for the enumeration of persons in public institutions, on board vessels, or in charge of boats and barges employed in inland navigation. Persons traveling during the night of Sunday, April 2, were to be included in the schedules of the hotel, or the house at which they arrived on the morning of Monday. Persons engaged in work away from home during the night of Sunday were to be included in the schedule left at the house where they usually resided. The causes why an unusual number of persons were present or absent at any given places were to be reported. The expedition with which the enormous mass of information was assorted and compiled may be known from the fact that the abstract showing the population of Great Britain was laid before parliament in print on the 20th of June, only eleven weeks from the day for collecting the schedules. The C. of Ireland at the same time was taken by 4,536 members of the royal constabulary, aided in cities by the local police. In Scotland there were 1016 local registrars, and 8,342 enumerators. The cost of this imperial C. was, in England, £5 5s. 7½d. for each 1000 of population; in Scotland, £8 1s. 4d.; in Ireland, £7 2s. 7d.

Census work began in the United States with the beginning of the government. In order to secure a proper apportionment of representatives in the lower house of congress a C. is taken every tenth year. At first it was nothing more than an enumeration of the people, classifying slave and free. Additions and improvements were made until the schedules of 1870 comprised questions as to name, age, sex, color, conjugal condition, place of birth and place of father and mother. To these were added particulars as to schools, libraries, newspapers, churches, disease and mortality, pauperism and crime, school, military and citizenship ages; areas of farms, families and dwellings; the blind, deaf and dumb, insane and idiotic, occupations of the people, wealth, taxation, and public indebtedness, and the amount and value of the products of agriculture and manufactures. The questions were certainly comprehensive enough, but the mode of taking the C. was slow, cumbrous, and unsatisfactory. It was two years and six months after the beginning of the work when the compilation known as the *Compendium* was sent to congress. In the introduction to this compendium gen. Walker, superintendent of the ninth C., says: "There is no reason, however, why, with such modifications of existing laws as would insure that the material should come originally to the census office in proper shape for tabulation, the entire compilation should not be concluded within a year from the date of the first receipt of returns. It is not possible for one who has had such painful occasion as the present superintendent to observe the workings of the census law of 1850, to characterize it otherwise than as clumsy, antiquated and barbarous. The machinery it provides is as unfit for use in the C. of the United States, in this day of advanced statistical science, as the smooth-bore muzzle-loading queen's arm of the revolution would be for service against the repeating rifle of the present time. It ought not to be possible that another C. should be taken under this law; such a thing ought not to be seriously proposed. The country has suffered more than enough already of discredit and of loss on account of the wretched insufficiency and inappropriateness of the provisions of this ill-constructed and outgrown statute."

In 1850 Mr. Joseph C. G. Kennedy, who superintended the C. of that decade, ventured to prophesy our future population, basing his estimates upon the progress already achieved. Of course, he did not make allowances for the war, then undreamed of. He reckoned that in 1870 we should have a population of 42,328,432, and in 1880

it would rise to 53,450,241. His estimates were high, but without the war we should probably have come well up to them. Taking the whole country, we lost through battle and diseases consequent upon military service more than a million of men; and these were men in the prime of life—just the period for natural increase of families. Three times as many, who did not lose their lives, were away from their homes one, two, or three years, and this, too, greatly reduced natural increase.

CENT (*ante*), a coin of the United States valued at the hundredth part of a dollar. The first one authorized by act of congress, April 2, 1792, was copper, and weighed 264 grains. The next year the weight was reduced to 208 grains, and in 1796 to 168 grains. Half cents were also coined, but not to great extent. Collectors of coins should remember that no coins other than gold or silver were issued from the United States mint in the year 1815 or 1832. By the act of Feb. 2, 1857 the issue of half cents was discontinued, and the copper C. was made of .88 copper and 12 zinc, and to weigh 72 grains. April 22, 1864, the bronze C. was introduced, consisting of .95 copper and .5 tin and zinc, and weighing 48 grains. Ten of the present cents weigh just a troy ounce, and 120 cents weigh a troy pound. They cannot be conveniently used for avoirdupois or common weight. Cents are legal tender to the amount of 25 cents.

CENTENNIAL EXHIBITION, in the United States, held at Philadelphia in 1876, a hundred years after the declaration of independence. It was opened in Fairmount park, May 10, 1876. An area of 236 acres was used, and the cost of the five main buildings was \$4,500,000. Before the close there were more than 200 separate buildings within the inclosure. Some idea of the magnitude of the preparations may be obtained from the apportionment of space in the main building, designed for the exhibition of the manufactured products and products of mines and metallurgy, as well as the condition of science and education in all nations. This building covered 20 acres, and was 1880 ft. long and 464 wide, with projecting wings in the center of the sides 416 ft. long, and in the center of the ends 216 ft. long. The exhibition space was on one floor. The roof of the main portion was 70 ft. high. In the center was an elevated square, with sides of 184 ft., having towers 120 ft. high and 48 ft. square at the corners. At the four corners of the building were towers 75 ft. high. The roof was supported by wrought-iron roof-trusses resting upon 672 wrought-iron columns. The sides were closed with glazed sash, above a substructure of brick 7 ft. high, resting on a foundation of massive masonry. Space was apportioned as follows, in square feet: Argentine Republic, 2,861; Austria-Hungary, 24,727; Belgium, 15,598; Brazil, 6,899; Canada, 24,118; Chili, 3,244; China, 6,628; France, 45,460; Germany, 29,629; Great Britain and Ireland, 54,155; India and British colonies, 24,193; Hawaiian islands, 1575; Italy, 8,943; Japan, 17,831; Luxemburg, 247; Mexico, 6,567; Netherlands, 15,948; Norway, 6,959; Orange Free State, 1058; Peru, 1462; Spain and colonies, 11,253; Sweden, 17,799; Switzerland, 6,693; Tunis, 2,015; Turkey, 3,347; United States, 136,684. Within this vast space the nations vied with each other in showing proofs of their industry, wealth, and greatness. A most interesting part of the exhibition was that devoted to the progress of modern education. Another building was the women's pavilion, covering an acre of ground, designed to receive the products of woman's ingenuity and progress. Besides the United States more than a dozen other nations were here represented. This was the first collective display of women's work ever attempted. The art building was called Memorial hall, and remains as a permanent monument of the exhibition. It is a splendid structure, in the renaissance style. On a central tower 150 ft. high stands a colossal statue of America; at the base are four figures of smaller proportions, representing the four quarters of the globe. The building is 365 ft. long by 210 wide, and 59 high; it is of granite, glass, and iron. Machinery hall, next in size to the main building, was 1402 ft. long by 360 wide, its area, including that of its annex, being nearly 13 acres. Steam, water-power, and shafting were provided by the commissioners. The United States building was 504 by 306 feet. In it were exhibited, as fully as possible, all the operations of government service. Horticultural hall, in the Moorish style of the 12th c., was built by the city of Philadelphia, and was intended to be permanent. It is of iron and glass, 383 by 193 ft., and 72 in height. Agricultural hall covered a rectangular space 820 ft. long and 540 wide. Great Britain erected three buildings for the use and entertainment of her commissioners; and Germany, Brazil, and Portugal each had a pavilion. The English buildings were fine specimens of the later Tudor architecture. Sweden exhibited a national school-house with educational appliances and furniture complete. France had a building containing charts, drawings, and models of public works. Canada displayed her woods and lumber in log and frame houses. Spain had a soldiers' barracks, and Cuba had an acclimatization garden. Turkey showed in a special building her sponge fisheries. Japan had a model dwelling. Morocco had a Moorish villa for the display and sale of her productions. Chili had a building containing models of amalgamating machines. There were also a number of special edifices belonging to private exhibitors. There was a Turkish café of true oriental type, where Mocha, mastic, Syrian tobacco, and Samian wine were dispensed. There were a Tunisian bazar, and an Algerine pavilion; Japanese booths, houses, and gardens; a New England farmer's home with the old style of kitchen, and other peculiar structures. There were 26 buildings for the headquarters of as many states, some of them containing large exhibitions of state products;

several were made of the stone or wood of the state represented. Thirty or more buildings were erected by private companies or individuals. Among them were the telegraph building, the transportation building, the bankers' building, the American kindergarten, the Bible building, and others showing the manufacture of innumerable articles; finally, the ingenuity of man was supplemented by bees making honey in the midst of all the crowd and turmoil. The exhibition was opened to visitors every day except Sunday for six months, closing on the 10th of November. The number of admissions was 9,910,966, of which number 7,250,620 paid the regular fee of 50 cts., and 753,654 the special rate of 25 cts.; 1,906,692 admissions were free, representing exhibitors, officers, employés, the press, and complimentary passes.

CENTER, a co. in middle Pennsylvania, traversed by the Allegheny and other mountain ridges, Bald Eagle creek, and two or three branches of the Pennsylvania railroad; 1000 sq.m.; pop. '70, 34,418. The chief business is agriculture. Coal, iron, and limestone are abundant. Co. seat, Bellefonte.

CENTRAL AMERICA, in geography that portion of North America included between the isthmus of Tehuantepec and the isthmus of Darien; politically including the states or republics of Guatemala, Honduras, Nicaragua, Costa Rica, and British Honduras, or Belize. The geographical limits would take in on the n. from Mexico the states of Tehuantepec, Chiapa, Campeche, and Yucatan; and on the s. from the republic of Colombia the greater portion of the state of Panama. Further details will be found under the titles of the respective countries. Also, see *AMERICA*, *ante*.

CENTRAL CITY, in Gilpin co., Col., about 40 m. w. of Denver; the center of supply for a rich mining district. Pop. '80, 2626.

CENTRAL HEAT involves the theory that the temperature of the earth increases from its surface towards its center. Observations in mines and in boring artesian wells seem to justify such a conclusion, and the inference therefore is that the solid earth is a mere crust, at most but a few miles thick, within which all matter must be in a state of fusion. Observers have estimated the increase of heat at 1° F. for 50 to 60 ft. of depth. Eminent philosophers, however, reject the theory, and attribute the phenomena to local heat. They argue that if such a mass of fire existed in the interior the crust would soon be melted. Some contend that if the earth ever cooled from a state of fire to its solid form, the cooling must have commenced in the center. The most that can be said is that it is still an open question, while experiments and indications seem to favor the theory of a fiery and fluid interior.

CENTRALIA, a city in Marion co., Ill., on the Illinois Central railroad, at a junction of the Chicago branch with the main line, 112 m. n. of Cairo. There are repair shops of the Illinois Central railroad, which give employment to many persons. Pop. 3,190.

CENTRAL INDIA POLITICAL AGENCY, the official name for a group of feudatory states in the middle of India, the principal of which are Gwalior (Scindiah), Indor (Holkar), Rewah, and Bhopal. The total number, great and small, comprised in the C. I. P. A. is 71; covering about 90,000 sq.m., and having a pop. of 8,000,000. These states have nothing in common except a diplomatic connection with the British government through the agent to the governor-general.

CENTRAL PARK. See *NEW YORK CITY*.

CENTRAL PROVINCES, a chief commissionership of British India, between 17° 50' and 24° 30' n., and 76° and 85° e.; 80,078 sq.m.; pop. '72, 8,201,519. The chief commissionership was constituted in 1861, when the territories previously known as the Nagpur province and the Sagar and Nerbudda territories were united under the name of the Central provinces. This tract comprising almost every variety of soil and physical aspect, inhabited by races of very diverse origin, is bounded n. by the feudatory state of Rewah, the small native states of Bundelkhand, and by the district of Latatpur in the Northwest Provinces; on the n. and e. by the Chhota Nagpur division, the Oressa tributary states, and the n. districts of Madras; on the s. by the Godavari district; and on the s.w. and n.w. by the states comprising the Central India Political Agency. The Central Provinces are separated into four divisions, or commissionerships: Nagpur, Jabalpur, Nerbudda, and Chhatisgarh, comprising 19 British districts. The country is intersected by the Great Indian Peninsular and the East Indian railroads. The pop. is made up in each thousand, of 717 Hindus, 28 Mohammedans, 4 Buddhists, 2 Christians, and 249 "others," who consist of descendants of Gonds and original inhabitants.

CENTUM VIRI, judges among the Romans appointed to decide common causes among the people. Three were chosen in each tribe. The extent of their jurisdiction is not clearly understood, but it was probably confined to unimportant causes.

CENTURION, a Roman infantry officer who originally commanded a hundred men, but afterwards an indefinite number. They were of two grades, and were chosen by the tribunes. Their duties were to drill the soldiers and appoint them tasks; and they had power to punish for minor offenses.

CENTURY PLANT. See *AGAVE*, *ante*.

CEPHALIZA'TION, a word used to indicate the degree in which the head, or, more accurately, the brain, dominates over the remainder of the animal structure. The distinction between a higher and a lower cephalization may be indicated thus:

SUPERIOR CEPHALIZATION.

More of the anterior appendages serve the head, in supplying food, etc.

The structure of the head is compacted, and its form abbreviated.

The posterior part of the body is abbreviated and compacted.

The anterior extremity tends upward; finds its limit in man, and is erect.

INFERIOR CEPHALIZATION.

Fewer of the anterior appendages serve the head.

The structure of the head is loose and imperfect; the form is elongated and enlarged.

Great length of tail shows inferiority of grade.

The anterior extremity tends downward, finds its limit and is horizontal in the fish.

Degradation often extends to the absence of essential parts, as teeth, limbs, senses, and is often indicated by gross enlargement of mass, accompanied by stupidity and sluggishness.

Degrees of cephalization may be illustrated by the subdivisions of the mammalia, beginning with the lowest: 1. The mutilates, in which the limbs are wanting, or are degraded to fins; as whales, dolphins, etc.: 2. Herbivores, or plant-eaters; as the elephant, horse, deer, hog, etc.: 3. Carnivores, or flesh-eaters: as the lion, bear, dog, wolf, etc.: 4. Quadrumanes, including monkeys: 5. Bimanes, including mankind. Following this arrangement, as we ascend step by step, we find constant degrees of development corresponding to higher cephalic character, and showing itself in every phase of organized structure. In locomotion, for example, we find the limbs of (1) the mutilates fit only for paddling the body about in the element which gives it support; those of (2) the herbivores carry them from place to place; those of (3) the carnivores carry them about, and serve to grasp and tear their prey; those of (4) the quadrumanes serve for locomotion, for grasping prey, for carrying food to the mouth, and for carrying and defending their young; while in (5) man the fore limbs are relieved from service of locomotion, and are fitted not merely for feeding, for carrying, for defense, but also for an infinity of purposes, to which they are guided by the acuter sensibility of the brain. Similar steps of gradation may be found in other respects, as in the tail, the teeth, the form of the skull, etc. The principle may be further illustrated by the gradations of the lower orders, as in the articulates, going from the worms through the crustaceans to the insects; or in insects, from myriapods through spiders to the true insects; as in the varieties of man, in which the lower races have projecting jaws, retreating foreheads, and enlarged basal brains. With increased brain-force we find diminished jaw, less facial angle, elevated and enlarged forehead, the head generally shortened from front to rear, a larger cavity for the brain, and a greater weight thereof. Finding this constant progression from lower to higher developments, whose exponent is larger and more efficient brain, with nicer adaptation of mechanism for all the functions of life; finding also evidence of a similar gradation in sensation, sensibility, intelligence—everywhere the material more and more subordinated to the immaterial, the body conformed to the spirit, and ruled by it—it is not strange that men should look for a law of development, pervading and controlling all animated nature, or that they should expect to find in this law a formula of the relation between thought and matter, as a function of the brain. But, while there may be abundant reason for supposing that such a law of relationship might exist, and that if demonstrated it might account logically for a vast and rapidly growing mass of observed facts, it is evident that no such law has yet been proved. Nor, indeed, does it now seem that such a law can be demonstrated without the admission of axioms and postulates, which involve as great strains upon the philosophic imagination as the very principles which such demonstrated law would antagonize and overthrow.

CERAC'CHI, GIUSEPPE, 1760–1801; a native of Corsica who was active in establishing a republic in that island in 1798. He took refuge in France, and with others undertook the assassination of Napoleon. The deed was to have been done while the consul was at the opera, Oct. 10, 1800, but there was a traitor among the conspirators, and C. and three others were seized, tried, and executed. C. was a sculptor of some note.

CERAMI'CUS, a public ground, or potter's field, outside of the walls of Athens, where citizens killed in war were buried at the expense of the state.

CERAUNIAN MOUNTAINS, a name given by the Greeks to two mountain chains, the first being probably the e. extremity of Caucasus; according to Strabo that portion of the Caucasus which looks down upon the Caspian sea, where he locates the land of the Amazons. The second, called also "Acroceraunian," extended along the coast of the Ionian sea. These mountains were often mentioned in ancient poetry. The chain is now called Khimara, Chimara, or Chinari.

CERDONIANS, a sect of Gnostics, founded by Cerdo, a Syrian, who came to Rome about 140 A.D. They held that there were two primal causes—the perfectly good, and the perfectly evil. The good created the world, is the God of the Jews, and the author of the Old Testament. Jesus Christ is the son of the good Deity: he was sent into the

world to oppose evil; but his incarnation, and consequently his sufferings, were mere appearance. Deeming the human body the work of the evil deity, the Cerdonians prohibited marriage, wine, and flesh-eating, and advocated fasting and other austerities. Cerdo rejected the Old Testament, and all of the New, except a part of Luke's gospel and Paul's epistles.

CEREBRO-SPINAL MENINGITIS. See MENINGITIS, *ante*.

CERRO DE PASCO, or Pasco. See CERRO GORDO, *ante*.

CERRO GORDO. See CERRO GORDO, *ante*, a mountain pass on the national road from Vera Cruz to the city of Mexico. April 18, 1847, gen. Scott with a United States force of 8,500 defeated Santa Anna, the Mexican leader, with 12,000 men, at this place. The Mexican loss was from 1,000 to 1,200 killed and wounded and 3,000 prisoners; that of the other side, 63 killed and 368 wounded.

CERRO GORDO, a co. in n. Iowa, intersected both e. and w., and n. and s. by railroads, and watered by Shell Rock river, Lime creek, and the head waters of Beaver Dam river; 652.sq.m.; pop. '70, 4,722. It is an agricultural region. Co. seat, Mason City.

CERRO GORDO DE POTOSI, a mountain in Bolivia, directly s.w. of Potosi, containing very rich silver mines. The summit is 16,150 ft. above sea level.

CERTIORARI (*ante*), a writ by a superior to an inferior court of record, requiring the latter to send to the former some proceeding pending, or the record of some cause terminated in cases where the proceedings were not in accordance with the course of common law. The writ is granted or refused at the discretion of the superior court, and the usual result is that the proceedings below are either quashed or affirmed.

CERUTTI, GIUSEPPE ANTOINE JOACHIM, 1738-92; a Jesuit and professor in the college of that order in Lyons. Among his works are an *Apology for the Institute of the Jesuits*; a *Memoir of the People of France*; a poem entitled *The Garden of Bietz*. He also edited a weekly journal, and was once elected to the legislative assembly.

CERVETERÉ, or CERVETERI (*ante*), a village on the site of the ancient Cære, in s. Etruria, near the Tyrrhenian sea, in the district of Civita Vecchia, 32 m. from Rome. It afforded refuge to the Tarquins after their expulsion from Rome, and was by the Romans chosen as the safest hiding-place of their treasures during the occupation of the capital by the Gauls. The old city thenceforward declined, and in 1250 was deserted by a large portion of its inhabitants, who removed to the present village of Ceri. From the fact that the old inhabitants were admitted to Roman citizenship without the right of suffrage, the "Cærite franchise" came to be a proverbial expression denoting disfranchisement. Many interesting Etruscan remains have been found in the tombs of the city. One of the sepulchres belonged to the Tarquin family.

CESNOLA, LUIGI PALMA DI, LL.D., Count, b. in Turin, Italy, 1832. When but 15 years old he enlisted in the war against Austria. In 1850, he graduated from the Turin royal military academy, receiving a commission which he surrendered in 1854. In the Crimean war he was a staff officer. He emigrated to New York in 1860, and began teaching languages. The next year he married one of his pupils, a daughter of commodore Reid, of the U. S. navy. In the war of the rebellion, he was col. of cavalry and participated in many engagements until June, 1863, when he was wounded and made prisoner. He was exchanged not long after, and left the service at the close of the war, with the rank of brig.gen.; at once became an American citizen, and was appointed consul at Cyprus. There he soon interested himself deeply in archaeological researches, and brought to light some of the most valuable remains of ancient Greek art thus far recovered (see ARCHAEOLOGY). Gen. Cesnola has devoted the greater portion of his time to Cyprian or Grecian exploration for the past 15 years. In 1878, he gave lectures in New York and elsewhere, and in 1879, was made a director of the metropolitan museum of art, in which his great collection is deposited. (See NEW YORK CITY.)

CÉSPEDES, CARLOS MANUEL DE, b. in Cuba, 1819; educated in the university at Havana, and admitted to the bar. He traveled in Europe and learned several languages. At Madrid he was concerned with Prim in a conspiracy to overthrow the government, and was compelled to fly. He returned to Cuba and began the practice of law. When Lopez made his revolutionary experiment, C. sympathized with the acts and was imprisoned. When the revolt of 1868 began he was the leader, and one of his first acts was to liberate the slaves on his sugar estate. On the 10th of Oct., 1868, he proclaimed the independence of Cuba on the field of Yara, and when the republic was formally organized, April 10, 1869, he was elected president. The attempt at revolution was kept up at intervals until 1878. On the 21st of Feb., in that year, the rebellion was officially declared at an end.

CÉSPEDES, PABLO DE, 1538-1608; a Spanish theologian, linguist, poet, painter, architect, and sculptor; b. at Cordova, and educated at Alcalá de Henares, and in art at Rome. He was a bold and correct draughtsman, a skillful anatomist, and a master of color and composition. His best picture is "The Last Supper," at Cordova. But little of his poetry has been preserved, the most important being fragments of *The Art of Painting*. C. held the office of prebend of the cathedral of Cordova.

CESTUI QUE VIE, a person whose life is the measure of the duration of an estate. If A. grants to B. an estate to be B.'s own so long as another person named C. lives, then C. is the *cestui que vie*.

CETUS, or **THE WHALE**, the largest of all the constellations. It reaches from 0° to 25° s. declination, and from 0 to 2h. 30m. right ascension. Mira, a variable star, is the most conspicuous feature.

CEYLON, *ante*. The Cinghalese, or Singhalese language is spoken in the interior and on the s. coast of the island of Ceylon. It is a modification of the aboriginal Ebu by the Sanskrit, with a tinge of Malay. The Cinghalese has so far degenerated that there is now a material difference between the vernacular and the written language. The former is copious and has a regular grammar. There are 50 letters, 8 vowels, 8 diphthongs, and 34 consonants, but all representing only 30 sounds, 7 vowels and 23 consonants. In literature the language has several original poems of some merit, and an extensive and interesting series of native chronicles, but the most valuable literature is written in Pali. This Pali is one of the Prakrits of ancient India, "which was spoken in the 6th c. before Christ, and has been a dead language for upwards of 2,000 years."

CHABAS, **FRANÇOIS JOSEPH**, b. 1817. He has devoted himself especially to Egyptian archaeology, in which he is considered among the highest authorities. His principal works are *Le Papyrus Magique Harris*; *Voyage in Egypt and Syria*; *Les Pasteurs en Egypte*, and *Studies in Ancient History*.

CHABLAIS, an old division of the province of Annecy in Savoy, now the arrondissement of Thonon, France; 356 sq.m.; pop. 60,193. It once formed a part of the kingdom of Burgundy. Under the French empire it was a part of the department of Lemann; in 1814, its possessions went to Sardinia, and in 1860, with all of Savoy, it was given over to France.

CHABOT, **PHILIPPE DE**, d. 1543; a French general, brought up with Francis I. He defended Marseilles in 1524, but the next year was made prisoner at Pavia. He was subsequently made admiral, and in 1535 commander in chief. He was said to have been the first to suggest the colonization of Canada. There is a monument to him in the Louvre.

CHA'BRIAS, an Athenian gen. who assumed command about 392 B.C. He defeated the Spartans at Ægina in 388, and again at Naxos in 376. He commanded with Iphicrates and Callistratus at Coreyra, and repulsed Epaminondas before the walls of Corinth. In 366, he was accused of treachery in advising the surrender of Oropus to the Thebans, and was defended by Plato. At the commencement of the social war, in 357, he joined Charos in the command of the Athenian fleet. At the siege of Chios his ship was disabled, but he refused to retire, and was killed while fighting. C. was famous for inventing a new style of receiving a charge, which was on the left knee, the shield resting on the ground, and the spears pointed at the enemy.

CHACHAPOY'AS, or **SAN JUAN DE LA FRONTERA**, a t. in the department of Amazonas, Peru, 410 m. w. of Lima; pop. 6,000. It is on a tributary of the Marañon, in a rich agricultural region.

CHACO, **EL GRAN**, a large and little explored country in South America, about the middle of the continent. The n. portion is well watered and densely wooded, with intervals of grassy plains and marshes, and capable of producing nearly all tropical vegetation. The s. portion is for the most part a desert and can be cultivated only after irrigation. The n. portion belongs to Bolivia, while the s. is occupied almost entirely by Indians.

CHAD, **SAINT**, bishop of York, in the 7th century. He was educated under Aidan at Lindisfarne. At his death he held the see of Litchfield. His day is Mar. 2.

CHADBOURNE, **PAUL ANSEL**, D.D., LL.D., b. Me., 1823; professor of natural history and chemistry in Williams college and in Bowdoin college, and in 1867, chosen president of the university of Wisconsin, at the same time becoming professor of metaphysics. In 1872, he was elected president of Williams college, and resigned in 1880. He has published *Natural Theology*, and *Instinct in Animals and Men*.

CHAILLU, **PAUL B. DU**. See **DU CHAILLU**.

CHAIN SNAKE, or **KING SNAKE**, an American serpent, haunting moist or shady places, and feeding upon mice, moles, small birds, and reptiles. It is remarkable for the beauty of its colors, the ground work on the upper part of the body being a lustrous black, while the scales are marked with white spots. The head is very small.

CHAJUG, or **CHIUG**, **JEHUDA BEN-DAVID**, b. about 1030; regarded by Jewish critics as the first of Hebrew grammarians. He made some very remarkable and valuable discoveries in philology.

CHALCHIHUITL, a stone held in great repute by the ancient Mexicans, and still by the Indians of that country, who fashion it into ornaments and occasionally use it in trade. It is a turquoise found in the mountains not far from Santa Fé. The mines were exhausted before the coming of the Spaniards. The stone was valued by the Mexicans more highly than gold.

CHALDÆAN CHRISTIANS, a branch of Nestorians who acknowledge the pope of Rome. They use the eastern rite, and are under the patriarch of Babylon. They are supposed to number about 70,000.

CHALEURS, BAY OF, a westward extension of the gulf of St. Lawrence, separating New Brunswick from Quebec. It is nearly 100 m. long, and varies in width from 10 to 22 miles. It is navigable in all parts, and is much resorted to for its mackerel fisheries.

CHALKLEY, THOMAS, 1675-1741; a Quaker preacher, native of London. He came to America in 1698, and traveled in Virginia, Maryland, and the New England colonies. Returning to England, he married, and soon afterwards came back and settled in Philadelphia. Again he crossed the sea and traveled in Holland and Germany; thence he went to the West Indies, where he died while engaged in missionary work. In his will he founded the library of the four monthly meetings of Friends in Philadelphia. The journal of his life and labors has been published.

CHALLONER, RICHARD, 1691-1781; the son of an English dissenter, but brought up among Roman Catholics, whose religion he embraced. He was ordained a priest at Douay, and made professor in the faculty. In 1730, he held the English mission in London, where he published several religious works. In 1758, he became vicar apostolic, residing generally in London; but during the "No Popery" riots of 1780, he retired into the country. He was the author of numerous controversial and devotional works, the most popular one being *The Garden of the Soul*, which has been frequently reprinted, and translated into various languages. He revised the Douay Bible (in English); and as an antidote to Foxe's well-known *Martyrology*, he wrote *Memoirs of Missionary Priests and Other Catholics of both Sexes, who suffered Death or Imprisonment in England on Account of their Religion*.

CHALMERS, ALEXANDER, 1759-1834; a Scotchman educated for a physician who gave up that calling for literature, writing for periodicals generally, and being for some time editor of the *Morning Herald*. Besides revised editions of standard authors, he published a *General Biographical Dictionary*, in 32 vols.; a *Glossary to Shakespeare*; and *British Essayists* from the *Tatler* to the *Guardian*, both inclusive.

CHALOTAIS, LA, LOUIS RENÉ DE CARADEUC, 1701-85; procureur-general of the parliament of Brittany, where he was a decided opponent of Jesuits. Grimm asserts that Chalotais's reports led to the suppression of the Jesuits in France. Voltaire gave C. high praise for his essay on national education. Later in life he was subjected to long political persecution, but was finally found free of blame, and resumed his place in the parliament at Rennes.

CHAM, or AMEDÉE DE NOÉ, 1819-79; b. Paris; the son of a former peer of France; he was intended for the polytechnic school, but preferring painting he studied with Paul Delaroche, and afterwards with M. Charlet, where he developed a talent for the grotesque. Beginning in 1842, he contributed, chiefly to *Charivari* (the *Punch* of France), an immense number of caricatures, and some sketches, under the signature of "Cham." His political cartoons are singularly sharp and effective. He has also written many vaudevilles.

CHAMBA, a feudatory state of n. India, subordinate to the Punjab government, between 32° and 33° 9' n., and 75° 54' and 76° 30' east. A range of mountains separate C. from Kashmir. C. is about 65 by 50 m. in length and breadth; pop. 140,000. The agricultural products are wheat and millet, and among other productions are timber, nuts, wax, honey, lime, and slate.

CHAMBER OF COMMERCE, *ante*. The Chamber of Commerce of New York city is the oldest existing institution of the kind in America, organized in 1768, and incorporated by royal charter Mar. 13, 1770, under the name of *The Corporation of the Chamber of Commerce of the City of New York in America*. When the state government was established the charter was renewed by the legislature. It was composed at first of 24 of the most prominent merchants of the city, who established an exchange which has been ever since kept up, though not recently under control of the body. The objects of the Chamber of Commerce are to encourage and promote commerce, support industry, adjust disputes relative to trade, and procure such laws and regulations as may be found necessary for the benefit of trade in general. The membership is about 800, including nearly all the leading merchants, financiers, and business men of the city. Several years ago a court of arbitration was established, by which differences between members are adjusted, and much litigation in courts avoided. Meetings are held once a month. In the rooms of the chamber is a vast collection of commercial and other statistics. Similar bodies exist in other large American cities.

CHAMBERLAIN, JOSHUA L., LL.D., b. Me., 1828; a graduate of Bowdoin college. During the civil war he served with distinction, was six times wounded, and left the service with the rank of maj.gen. From 1866 to 1870, he was governor of Maine, and in 1871 was chosen president of Bowdoin college. When the democrats and fusionists under the lead of gov. Garcelon, in 1879-80 undertook to get possession of the state government, and there was some danger of civil war, C. was general-in-chief of the militia of the state. He adhered to the regularly elected legislature, as sustained by the

unanimous opinion of the supreme court, and by a quiet but firm hold of his lawful power, without any display of military force, prevented the intended violence and usurpation.

CHAMBERS, a co. in e. Alabama, on the Georgia border, intersected by the Atlantic and West Point railroad. Before a division was made to form Lee co., the area was 775 sq.m.; pop. '70, 17,562—8,588 colored. It is partly bounded by the Chattahoochee river, and is intersected by the Tallapoosa. Productions, cotton, corn, wheat, and sweet potatoes. Co. seat, Lafayette.

CHAMBERS, a co. in s.e. Texas, on the gulf of Mexico, bounded on the w. by Galveston bay, and intersected by Trinity river; 900 sq.m.; pop. '70, 1503—452 colored. The surface is mainly prairie; productions, corn, cotton, and sweet potatoes. Co. seat, Wallisville.

CHAMBERS, GEORGE, 1803—40; an English painter. When a boy he followed the sea, where he made sketches of vessels, which so pleased his master that he canceled the boy's indentures. C. then apprenticed himself to an old woman who kept a paint-shop, and began house-painting. Finally he got employment as assistant in painting the panorama of London for the Colosseum, and then became scene-painter in a theater. His best works are naval battles, such as "The Bombardment of Algiers," and "The Capture of Porto Bello," both in the Greenwich hospital.

CHAMBERSBURG, the seat of justice of Franklin co., Penn., on the Cumberland valley railroad, 52 m. s.w. of Harrisburg; pop. '70, 6,308. C. is in the midst of a populous and well-cultivated region, and has manufactories of cotton, wool, iron, paper, etc. The village is well built. A great part of it was burned July 30, 1864, by the confederates under gen. Early. C. is the seat of Wilson college for young women.

CHAMBERTIN, a vineyard in the department of Cote d'Or, France, 6 m. s.s.w. of Dijon. It covers about 60 acres, and produces a red wine notable for excellence.

CHAMBLY, a s.w. co. in the province of Quebec, Canada, on the St. Lawrence, opposite Montreal; 190 sq.m.; pop. '71, 10,498. It is intersected by the Montreal and Richelieu rivers, and by the Grand Trunk and the Champlain and Montreal railroads, and the Chambly canal. Chief town, Chambly.

CHAMBORD, MARIE THÉRÈSE BÉATRICE GAËTANE, Countess de, Archduchess of Austria; b. July 14, 1817; wife of the Bourbon who calls himself Henry V. of France, and eldest daughter of Francis IV., duke of Modena. Her sister was the wife of Don Juan de Bourbon, and mother of Don Carlos, duke of Madrid. She won great reputation and respect for her care of sick and wounded French soldiers during the German war.

CHAMBURE, AUGUSTE LEPELLETIER DE, 1789—1832; a French soldier, whose daring at Dantzic in 1813, and in other places during Napoleon's wars, earned for him the name of "the devil." He was a prisoner for a time, but was released, and restored to military command in France. After Louis Philippe came to the throne, C. became one of the staff of Soult, minister of war.

CHAMFORT, SÉBASTIEN ROCH-NICOLAS, 1741—94; one of the most remarkable and among the first of French Bohemians, or brilliant but thriftless authors, or wits. He was the illegitimate son of a strolling actress, and never knew his father. Starting in life with only the name "Nicolas," he found his way to Paris, got into the college des Grassins, worked hard, and won nine prizes out of ten in two years. Much disgusted with the Latin hexameters that crowned his college reputation, he considered the time wasted which he had spent over them, summarizing his opinion in the contemptuous epigram, "What I know I do not know; what I do not know I guess." He assumed the name of C., and began writing for the press for bread and renown. Being repelled alike by booksellers and editors, he took to writing sermons at a louis each for lazy or incompetent priests. Having successfully competed for one of the academy prizes, the salons of the upper world were opened to him, and he became fashionable. He went on with alternate success and failure, always poor, and living for the most part upon eleemosynary dinners and suppers, repaying countenance and sustenance with his always brilliant but cynical and sarcastic conversation. He was entertained at Sèvres for some years by Mme. Helvétius, and Chabanon gave him his pension of 1200 livres in the *Mercure de France*. C. also took two more academy prizes, won a hundred livres from Necker, and obtained an enormous reputation. He wrote little and talked much; his reputation increased, and finally, under the protection of the duchesse de Grammont, he went to court, where the prince de Condé made him his secretary. He was now about 40 years old, and fast growing misanthropic. He resigned his secretaryship and retired into solitude at Auteuil, where he fell in love and married a lady attached to the household of the duchesse de Maine. She was a clever, amusing woman of the world; but in six months she left C. a widower. Then he traveled in Holland, where he lived awhile with M. de Narbonne. Then, returning to Paris, he received the chair in the academy left vacant by the death of Sainte Pelaye in 1781. He haunted the court and made himself loved in spite of his withering and uncontrollable irony; but in conse-

quence of an unfortunate love affair he left the court and was received into the house of M. de Vaudrenil; about which time he made the acquaintance of Mirabeau, whom he assisted with orations, and whom he followed heart and soul into the storm and tumult of the revolution. He forgot his old friends; he frequented the clubs, and was for a time secretary of that of the Jacobins; he became a street orator; was among the first of the storming party to enter the Bastille; and worked for a royalist journal in which he depreciated kingships. With the fall of the Girondins his political life came to an end; but he could not restrain the tongue that had made him famous: he no more spared the convention than he had spared the court. This rashness was the cause of his arrest, and he was threatened with a second arrest, whereupon he attempted suicide with pistol and poignard; and, shockingly hacked and shattered, dictated to those who came to arrest him the well-known declaration: "I, Sebastien Roch-Nicolas Chamfort, declare that I would sooner suffer death as a free man than be conducted as a slave to prison." He did not die immediately, but lingered awhile in charge of a gendarme. To the abbé Sieyès he had given fortune in the title of a pamphlet, *What is the Third Estate? Everything. What has it? Nothing.* And to Sieyès also he spoke the famous sarcasm: "At last I am about to leave the world, where the heart must be broken or be changed to brass." As a writer, C. left little of value. It was as a conversationist, and especially for his epigrammatic wit and cynicism, that he won a world-wide fame.

CHAMPAGNE, or CHAMPAIGNE, PHILIPPE DE, 1602-74; a painter of Brussels, born of a poor family. He was a pupil of Fouquier, and in 1621 was employed with Nicholas Poussin to paint in the Luxemburg palace. His best work is in Vincennes, and in the Carmelite church in Paris, where may be seen his celebrated crucifix. He became first painter to the queen of France, and rector of the Paris academy.

CHAMPAIGN, a co. in e. Illinois, intersected by the Toledo, Wabash and Western, the Chicago branch of the Illinois Central, and the Illinois, Bloomington and Western railroads; 880 sq.m.; pop. '70, 32,737. The surface is level, and the chief productions are corn, broom-corn, oats, potatoes, wheat, hay, cheese, butter, wool, and sorghum molasses. Co. seat, Urbana.

CHAMPAIGN, a co. in w. Ohio, intersected by Mad river, and by the Cincinnati, Sandusky and Cleveland, the Pittsburg, Cincinnati and St. Louis, and the Atlantic and Great Western railroads; 390 sq.m.; pop. '70, 24,188. The chief productions are corn, wheat, oats, potatoes, hay, butter, and wool. There are also a number of important manufactories. Co. seat, Urbana.

CHAMPAIGN, a city in Champaign co., Ill., on the Illinois Central and the Indianapolis, Bloomington and Western railroads, 128 m. s.s.w. of Chicago. It is the seat of the Illinois Industrial university. Champaign is a handsome and growing place, 2 m. from Urbana, the county seat, with which it is connected by horse railroad. Pop. '70, 4,625.

CHAMPARAN, a district in India, in the Behar province, under the jurisdiction of the lieutenant-governor of Bengal; 26° and 28° n. and 84° and 86° east. The district is a vast level except in the n. and n.w., where it is undulating and rugged as it nears the mountains of Nepal. The s. and w. portions are well cultivated, and have a dense population. The whole population in 1872 was 1,440,815, of whom 86 in a hundred were Hindus, 14 Mohammedans, 7 unspecified, and one in a hundred Christians. There are only two towns of consequence: Bettiah, pop. 19,708; and Motihari, the headquarters of the district, pop. 8,266. The principal crops are rice, corn, barley, sugar-cane, opium, and indigo; and the mineral products, gold, copper, and limestone. Indigo, saltpeter, and rope are the only manufactures.

CHAMP DE MARS, originally CHAMP DE MAI, the title given to annual meetings of the Franks of Gaul in the 5th c. and later. They were national assemblies in which the chief men gathered to pay obeisance to their chief; or were special meetings called by the king, to deliberate upon important matters; or military reviews. One of the Carlovingians changed the time of regular meeting from Mar. to May, whence the name. The Romans called them *plactia*.

CHAMP DE MARS, a great parallelogram in the environs of Paris, between the Seine and the Ecole Militaire, used especially for military purposes and drills. It is 1093 yards long and 537 wide, with four rows of trees on either side, flanked by ditches, and entered by five gates. It has been the site of many remarkable political and other demonstrations, from that against the legislative assembly in 1791, to the more peaceful universal expositions of 1867 and 1878.

CHAMPE, JOHN, 1752-98; a soldier in the revolutionary army, who was sent as a spy to New York with a view to carry off Arnold, who, after the discovery of his treason, had taken refuge in the British lines. C. discovered that Arnold was in the habit of walking in his garden at a late hour every night, and arranged to seize and hurry him to a boat and across the Hudson; but on the appointed night Arnold had changed his head-quarters and failed to appear. C. immediately escaped and rejoined the patriot army, but he was at once honorably discharged from service, lest if taken prisoner he should be summarily hanged as a spy.

CHAMPFLEURY (real name **JULES FLUERY**), b. 1821. Beginning as a clerk with a Parisian book-publisher, he speedily acquired reputation by such books as *Confessions of Sylvius*; *Adventures of Mariette*; *Stories of Winter, Spring, and Autumn*; and a number of pantomimes. He is one of the founders of *L'Evenement* newspaper; and an author of *Les Oies du Noel* for Proudhon's *Voice of the People*. A satire on country life, *Les Bourgeois de Molinchart*, added to his fame. His works have been published with illustrations, including the *History of Ancient and Modern Caricature*.

CHAMPION HILLS, in Hinds co., Miss., where, May 16, 1863, a confederate force under gen. Pemberton had a short fight with gen. Grant's forces, then marching upon Vicksburg. The confederates were beaten and forced to retreat to Big Black river.

CHAMPLAIN, LAKE (*ante*), discovered by Samuel Champlain in 1609, the year in which Henry Hudson discovered New York bay and the North river. The possession of this lake was a matter of importance in the war between the United States and Great Britain in 1812-15. In Aug., 1814, an English army of 12,000, led by sir George Prevost, passed up the w. side of the lake to Plattsburg, accompanied by a squadron of 16 vessels, 95 guns, and 1,000 men. The Americans had a hastily constructed fleet in Plattsburg, comprising 14 vessels, 86 guns, and 850 men. A fierce engagement took place Sept. 11, in the beginning of which the English had the advantage, but the victory was with the Americans. The British land forces abandoned the design of invasion, and under cover of darkness and a storm hastily retraced their steps toward Canada, abandoning their sick and wounded, and a part of their baggage. There are in the lake about 50 islands, the largest of which are North and South Hero, and Isle La Motte. The lake is noted for its magnificent scenery, and is a favorite resort for summer tourists.

CHAMPLAIN, a co. in the province of Quebec, Canada, bordering on the n.w. bank of the St. Lawrence, about midway between Montreal and Quebec; 229 sq. m.; pop. '71, 3,167. It is intersected by the St. Maurice and other rivers. The soil is fertile, and there is abundance of good timber. Besides ordinary agricultural crops, tobacco and maple sugar are raised. Chief town, Batiscan.

CHAMPLAIN, a township in Clinton co., N. Y., on the Canada border, forming the extreme n. e. point of the state. It has a village of the same name; pop. of township, '75, 5,306. The village is on the Ogdensburg and Lake Champlain railroad, 114 m. e. of Ogdensburg.

CHAMPLAIN, SAMUEL DE, 1567-1635; the son of a sea captain, and when young in the army of Henry IV. of France. He accompanied the Spanish fleet to the West Indies, and on his return wrote an account of the voyage. In 1603, he was sent to Canada by De Chaste, on whom the king had bestowed some of the new territory. From 1604 to 1607, he was engaged in exploring the coasts and seeking a desirable place for a settlement. The next year he made a third voyage, and began a settlement at Quebec. After many misfortunes and struggles the settlement became prosperous. In 1629, it was captured by some English adventurers, and C. was taken to London, but was set at liberty in 1632. The next year he returned to Canada, and died there. C. was in fact the governor of the settlement from its commencement until his death.

CHAMPLIN, JAMES TIET, D.D., b. Conn., 1811; a graduate of Brown university, and tutor therein; from 1838-41 pastor of a Baptist church in Portland, Me.; 1841-57, professor of ancient languages in Waterville college, and from 1857-72, president of of the same institution, now known as Colby university. He has published a number of college text-books.

CHAMPNEY, BENJAMIN, b. N. H., 1817; an artist noted for landscape painting of Alpine and White mountain scenery. In early life he was a lithographer in Boston.

CHAMPNEY, JAMES WELLS, b. Mass., 1843; learned the business of wood engraving, taught drawing, and studied painting in Europe. He served as a volunteer in the civil war.

CHANCELLOR (*ante*). The constitutions of some of the United States create this officer and define his power by legislative statute. In New York, the officer was recognized with others of colonial (English) appointment in the first and second constitutions, but in the constitution of 1846 the court of chancery was abolished, and the C. passed out of office. The tendency of late years is to merge the courts of chancery into the superior law courts. Separate chancery or equity courts exist in only a few states; in others the courts of law sit also as courts of equity; in some equity relief is administered under the forms of the common law; and in others still the distinction between law and equity has been formally abolished. The federal courts exercise equity jurisdiction whether the state courts in the district are courts of equity or not.

CHANCELLORSVILLE, BATTLE OF, in Spottsylvania co., Va., between the union army under Gen. Hooker and the confederate forces under Gen. Lee, May 2, 1863. Hooker had succeeded Burnside in command of the army of the Potomac, and after nearly three months' work brought it into a state of efficiency. He had 132,000 men, 13,000 of whom were cavalry. This army, in seven corps, lay on the Rappahannock opposite to Fredericksburg. On the heights on the other (right) bank the confederate

army was strongly intrenched; it numbered 62,000 men, of whom about 8,000 were cavalry. Hooker resolved to turn the confederate left flank, first sending nearly all his cavalry to destroy communication with Richmond. April 27th, Hooker sent 36,000 men up the left bank of the river beyond the confederate line, and they crossed safely. The objective point was C. a solitary brick dwelling-house in a wide and barren region. Before sunset, on the 30th, 48,000 union soldiers had reached the place. Another considerable union force had crossed the Rappahannock below Fredericksburg, and were making demonstrations in the confederate front. Lee appears to have been unaware of these movements until the evening of the 30th. At midnight his men were in motion, and before noon of May 1st he was in line of battle in Hooker's front. At daybreak "Stonewall" Jackson, with 30,000 confederates, moved behind the shelter of a dense forest (the "Wilderness"), and at 3 P.M., after a march of 15 m., fell upon the union army while the men were preparing their dinner, with arms stacked and their intrenchments unguarded. The union forces fled without making a stand, and pushed towards C. There they were with difficulty brought to a stand. Jackson, who had pursued them closely, rode out to reconnoiter, when he was fired on by his own men who mistook his escort for a union company. He died the next day. Thus far the greatest damage suffered by the federals was the temporary disorganization of Howard's corps, which was the weakest corps in the field; and this was more than supplied by the arrival during the night of a large corps from Washington. On the morning of May 3d (Sunday), Hooker was still on the defensive. The confederates began the attack, and it was hotly continued until 10 o'clock, both sides suffering severely. While Sickles was bearing the brunt of Stuart's attack, the ammunition failed, and Sickles sent for aid. At the moment the message came to Hooker, he was struck by a spent ball and fell insensible to the ground; so there was no one to send aid to Sickles, and he was obliged to fall back. The weight of some half-dozen assaults fell upon his division, until he was overpowered and his lines destroyed. The day passed in desultory fighting and strategic movements, in which, on the union side, there was much indecision and loss of opportunity. During Monday night Hooker resolved to abandon his position, and threw up intrenchments to cover his bridges. A storm came on Tuesday afternoon, but during the night the union forces crossed the river, and the battle was over. The losses, as set forth in official reports, were: on the union side, 17,000, of whom 12,000 were killed and wounded and 500 missing; on the side of the confederates about 13,000, of whom 10,300 were killed and wounded and 2,700 missing.

CHANCERY, COURT OF (*ante*), in this country exists only in a few of the states: some never established the court at all, and a number which inherited it from English colonial times or established it in their first constitutions have abolished it and given the equity duties to the courts of law. According to latest authority, the court of chancery exists in Alabama, Delaware, Florida, Mississippi, New Jersey, Tennessee, and Vermont; but in most of these states the court of chancery is held by a justice of the supreme court.

CHANDÂLA, the lowest of the impure classes in Hindu caste. Besides the four pure classes there are various mixed and more or less impure classes, some of which, the C. for instance, are so vile that their shadow is pollution, and no true Hindu will take shelter under the same roof or tree with them.

CHANDELEUR ISLANDS, in the gulf of Mexico, between the mainland of Mississippi and the mouth of the river. There is a light on the n. end of the most northerly island, in 30° 8' n., and 83° 52' west.

CHANDLER, CHARLES FREDERICK, PH.D., LL.D., b. Mass., 1836; educated at Harvard, Berlin, and Gottingen. In 1857, he had charge of the chemical department of Union college, and in 1864, was made professor of chemistry in the school of mines of Columbia college. In 1858, he held the chair of chemistry in the New York college of pharmacy. He is a member of the chemical societies of Berlin, Paris, and London. In 1870, with his brother he established *The American Chemist*. Recently he has been the chief officer of the board of health of New York city, and has paid much attention to sanitary reforms. He is the author of many important scientific papers, the greater number of which can be found in his magazine.

CHANDLER, SAMUEL, D.D., 1693-1766; a dissenting minister of Berkshire, England, the son of an eminent non-conformist divine. He studied at Gloucester and Leyden, and held life-long friendship with bishop Butler and archbishop Secker. He was a fellow of the royal and antiquarian societies, and received offers of high preferment in the established church, but these he positively refused and remained until his death a Presbyterian minister. He was forty years pastor of the meeting house in the Old Jewry. He left many sermons, commentaries, and other works pertaining to religious and church matters.

CHANDLER, ZACHARIAH, b. N. H., 1813; d. Chicago, 1879. He was educated in a common school and seminary. At the age of 22, he went to Michigan and settled in Detroit, where he became a wealthy and prosperous merchant. He was an early and active member of the whig party, and in 1854 was elected mayor of the city. The next year he was nominated for governor, but was defeated. When the republican

party was organized, he took an active part, and was by it chosen U. S. senator in 1856. In the senate he was a firm opponent of all schemes for the extension of slavery, and stood side by side with Benjamin Wade of Ohio, and others who resisted the arrogant tone of the extreme pro-slavery senators. When the civil war broke out, Chandler was one of the foremost in favor of a vigorous prosecution, and had little respect for those whom he denounced as traitors. In 1865, he was defeated for senator, but was at once appointed secretary of the interior, where his business talent soon became manifest in the improved administration of the department. In 1868, and again in 1876, he was chairman of the republican national committee, having the general management of the party canvass. The day before he died he made a powerful speech to a great mass-meeting.

CHANDLER SCIENTIFIC DEPARTMENT. See DARTMOUTH COLLEGE.

CHANNING, EDWARD TYRREL, LL.D., 1790-1856; brother of William Ellery Channing, D.D.; a lawyer of Boston who devoted his attention chiefly to literature. In 1817 to 19, he edited the *North American Review*, and was a regular contributor to it through a large part of his life. He was professor of rhetoric and oratory in Harvard college until 1851. A volume of his lectures has been published.

CHANNING, WALTER, 1786-1876; a physician, native of Rhode Island, brother of William Ellery Channing, D.D. He studied medicine in Boston and Philadelphia, and in Edinburgh and London. In 1815, he was professor of obstetrics and medical jurisprudence in Harvard, resigning in 1854. He was also for 20 years physician of the Massachusetts general hospital. Among his writings are *Etherization in Childbirth*; *A Physician's Vacation, or a Summer in Europe*; *Professional Reminiscences of Foreign Travel*; *Old and New*; *Reformation of Medical Science*; and a volume of poems.

CHANNING, WILLIAM ELLERY, b. Mass., 1818; a son of Dr. Walter Channing. He studied in Harvard, but did not graduate. In 1839, he went to Illinois, and in 1840 to Cincinnati, where he was for a time connected with the *Gazette*. In 1844-45, he was one of the editorial corps of the *New York Tribune*; visited Europe soon afterward, and in 1855 became one of the editors of the *Mercury* of New Bedford. He has published three volumes of verse, and, in prose, *Conversations in Rome* and *Thoreau, the Poet-Naturalist*.

CHANNING, WILLIAM HENRY, b. Mass., 1810; nephew of William Ellery Channing, D.D. He graduated at Harvard in 1829, at Cambridge divinity school in 1833, and was ordained in charge of a Unitarian church at Cincinnati in 1835. After filling several pastorates in this country he succeeded James Martineau as minister of the Hope street Unitarian chapel, Liverpool, England. On the commencement of the rebellion he returned and took charge of the Unitarian church in Washington. He was one of the early supporters of the socialistic movement in this country, was editor of *The Present* and *The Harbinger*, and in 1848 presided over a socialistic association in Boston. He has been a prolific writer, contributing to the *North American Review*, *The Dial*, *The Christian Examiner*, and other serials. Among his larger works are a translation of Jouffroy's *Ethics*; *Memoir of William Ellery Channing*; *Memoirs of the Rev. James H. Perkins*; *Memoirs of Margaret Fuller Ossoli*; and a work on *The Christian Church and Social Reform*.

CHANT (see AMBROSIAN CHANT, and GREGORIAN CHANT, *ante*), a modification between singing and recitative especially used for litanies and psalms in the Roman Catholic and Protestant Episcopal service. The chant is the ancient style of church-song, certainly as old as Christianity, which seems to have inherited it from the Jewish church. St. Paul exhorts believers to sing (to chant) psalms and hymns and spiritual songs; and Pliny the younger mentions the early morning assembling of Christians to chant hymns to Christ. As rhymed and metrical hymns, now so common, were the product of a later art, so the tunes accompanying them are modern as compared with chants.

CHANTAL, JEANNE FRANÇOISE FRÉMIOT, 1571-1641; a daughter of the president of the parliament of Dijon. Her husband was killed in hunting, whereupon she took the vows of celibacy, and devoted herself to the education of her children and the care of the sick and poor. She was, under the direction of St. François de Sales, the founder of the order of the visitation at Annecy. She was canonized in 1767. One of her sons was the father of Madame de Sevigné.

CHANTILLY, a village in Fairfax co., Va., 20 m. w. of Washington, where, Sept. 1, 1862, a battle occurred between the right of the union army under Pope and the confederates under Jackson. The battle continued, in spite of a severe thunder-storm, until dark, but without important results. The unionists suffered the loss of two generals killed, Philip Kearny and Isaac I. Stevens.

CHANZY, ANTOINE EUGÈNE ALFRED, b. 1823; a French gen. who first served as an apprentice in the navy. In 1843, he graduated from the Paris military school as sub-lieut. of zouaves. He served in Algeria, Italy, and Syria, and again in Algeria. In 1868, he became gen. of brigade, and early in the Franco-Prussian war he rose to commander-in-chief of the second army of the Loire. During the supremacy of the

commune, he narrowly escaped death. In 1872, he was elected to the national assembly, where he acted with the left-center party. In Dec., 1875, he was chosen senator for life, and in 1878 received the grand cross of the legion of honor.

CHAPEL HILL, a village in Orange co., N. C., 28 m. n.w. of Raleigh; pop. about 3,000. It is the seat of the university of North Carolina.

CHAPIN, AARON LUCIUS, D.D., b. Conn., 1817; a graduate of Yale, and Union (N. Y.) theological seminary. In 1838, he was a professor in the New York institution for the deaf and dumb. In 1844, he became pastor of the First Presbyterian church in Milwaukee, Wis.; and in 1850, was chosen first president of Beloit college, an office which he still holds. He was for some years one of the editors of the *Congregational Review*.

CHAPIN, EDWIN HUBBELL, D.D., b. in Washington co., N. Y., 1814; educated at a seminary in Bennington, Vt., and commenced preaching in Richmond, Va., to a congregation of Unitarians and Universalists. In 1846, he went to Massachusetts, and in 1848, to New York, where he became minister of the Fourth Universalist church. He has ever since remained over this congregation, which, from a small beginning in the lower part of the city, has grown to rank among the largest, occupying a prominent church edifice in Fifth avenue, known as the Church of the Divine Paternity. Besides his regular sermons he has delivered a great number of lectures, and has published several volumes, among which are *Duties of Young Men*; *Duties of Young Women*; *Characters in the Gospels*; *Communion Hours*; *Discourses on the Lord's Prayer*; *Crown of Thorns*; *The Beatitudes*; *Moral Aspects of City Life*; *True Manliness*; and *Discourses on the Book of Proverbs*; besides sermons.

CHAPLAIN (*ante*), in the United States officially known only as the chaplain of the senate and of the house of representatives, and in the army and the navy. In some of the states there are chaplains for one or both of the legislative bodies. In the army there are both post and regimental chaplains; and there is usually a chaplain in every regiment of militia, though they are not always ordained clergymen. In the navy there are a certain number of chaplains, according to the number of vessels in commission. It is usual, also, to appoint chaplains to state prisons, to reformatory institutions, and to asylums. Where there are radical differences of religious belief to any considerable extent, as in the institutions of New York city, chaplains of Protestant, Roman Catholic, and Jewish faith are employed or permitted to officiate.

CHAPLIN, JEREMIAH, D.D., 1776-1841; a native of Massachusetts, graduated at Brown university, and for some years a tutor there. He was for 16 years pastor of a Baptist church in Danvers, Mass., and from 1820-32 president of Waterville college.

CHAPMAN, JAMES, A.M., D.D., b. N. H., 1830; graduated at Waterville college, and in 1855 became a Methodist minister. He has occupied pulpits in several New England towns, in Boston, and in Brooklyn, N. Y.

CHAPMAN, JOHN GADSBY, b. Va., early in this century. He studied art in Rome, and returned to New York, where he had a studio, but not long afterwards went back to Rome, where he now resides. Among his paintings are "The Baptism of Pocahontas" (for the capitol in Washington); "An Etruscan Girl;" "The Israelites Spoiling the Egyptians;" "The First Italian Milestone;" "A Donkey's Head;" and "The Last Arrow."

CHAPPE, CLAUDE, 1763-1805; an engineer, and the inventor of the first working telegraph of any importance. His invention consisted of an upright post, on the top of which was fixed a transverse bar, and at the ends of the bar two smaller arms movable on pivots. The position of the bars represented letters or words; and by means of such machines placed at remote but easily visible points, messages were conveyed fifty leagues in a quarter of an hour. Until almost the period of electric telegraphy, the machine was used especially for noting the arrival of ships. C. was so much annoyed by charges that he had copied his invention from others, that he committed suicide.

CHAPSAL, CHARLES PIERRE, 1787-1858; a French grammarian, joint author (with François Joseph Noel) of the *Nouvelle Grammaire Française, avec Exercices*, one of the most widely adopted of all grammars of that language. The proceeds of the book gave him a fortune, much of which was given to charities, among which was one bequest of 80,000 francs to the teachers in the environs of Paris.

CHAPTAL, JEAN ANTOINE, 1756-1832, count of Chanteloup, a French chemist and statesman. He was professor of chemistry at Montpellier, where he taught the doctrines of Lavoisier instead of those of Stahl. By the death of an uncle, C. acquired capital, which he employed in manufacturing mineral acids, alum, white lead, soda, and other chemical wares. After the revolution of Nov. 9, 1799, he was made a counselor of state by Napoleon, and succeeded Lucien Bonaparte as minister of the interior, in which capacity he established a school of arts, and a society of industries. He also reorganized the hospitals, introduced the metrical system of weights and measures, and otherwise greatly encouraged arts and sciences. On Napoleon's return from Elba, C. was made director general of commerce and manufactures, and minister of state. The downfall

of the empire sent C. to private life, but he kept his interest in science, and in 1816 was named member of the academy.

CHAPU, a maritime t. in the province of Che-keang, China, 50 m. n.w. of Changhai, in one of the richest districts in the country. It is the port of Hang-Chow, with which it has canal communication, and it was formerly the only Chinese port trading with Japan. It is about 5 m. in circuit, exclusive of the suburbs. It was attacked and much injured by the British, who captured it in 1842, but it was immediately abandoned by them.

CHAPULTEPEC, a fortress on a mound of rock about 200 ft. high, 2 m. s.w. of the city of Mexico. In the war with the United States this fortress, one of the chief defenses of the city of Mexico, was taken (Sept. 12, 1847) by gen. Scott, and the city itself was captured the next day.

CHARBAR, or CHOUBAR BAY, a harbor in the Indian ocean on the coast of Beloochistan; 25° 16' n., 60° 35' east. The town of Charbar at the entrance is garrisoned by the sultan of Oman. Near by are the ruins of the early Portuguese settlement of Tees.

CHARCAS. See CHUQUISACA, *ante*.

CHARDIN, Sir JOHN, 1643-1713; a native of Paris, the son of a jeweler, and bred to the same business; but preferring adventure he traveled in Persia and India in 1665-69. Two years later he made a second and more extended journey of four years. In 1681, he settled in London, and was knighted by Charles II. In 1686, he published a portion of the *Travels of Sir John Chardin into Persia and the East Indies*, etc. The complete account of his travels, however, did not appear until 1711.

CHARES, 4th c. B.C., an Athenian general who relieved the Philasians from the siege of the Argives and Arcadians; fought against Oropus; lost the island of Coreyra to Athens; commanded jointly with Charnas in the social war, and made a successful attack upon Chios, in which Charnas was killed; led an expedition against and captured Sestos; commanded in Thrace, where his main business was private plundering; and in 338 was one of the Athenian commanders in the battle of Chæronea.

CHARES, a Grecian artist in bronze, a native on Lindus, and the designer of the colossus of Rhodes, lived in the 3d c. B.C. He was a pupil of Lysippus.

CHARISTICARIES, officers (in Greek ecclesiastical history) who had full power over the revenues of hospitals and monasteries.

CHARITON, a co. in n. central Missouri, lying n. and e. of the Missouri and w. of Grand river, and intersected by the North Missouri railroad; 740 sq.m.; pop. '70, 19,136-2,800 colored. The surface is rolling prairie and forest, with fertile soil. Coal and limestone are found. Chief productions, wheat, oats, corn, hay, tobacco, and butter. Co. seat, Keytesville.

CHARITON, or GRAND CHARITON, a river rising in s. central Iowa, and flowing s.e. into Missouri, thence s. joining the Missouri river in Chariton co.; 250 m. long, and navigable about 50 miles.

CHARLEMONT. See GIVET, *ante*.

CHARLES, a co. in s.w. Maryland, between the Potomac and Pawtucket rivers; 450 sq.m.; pop. '70, 15,738-9,318 colored. Surface uneven, with forests of locust, oak, ash, chestnut, and cedar. Tobacco is the main production. Co. seat, Port Tobacco.

CHARLES I., THE BALD, 823-77; King of France and emperor of the Romans, son of Louis le Debonnaire by his second wife, Judith. The father, in order to furnish C. a kingdom, took away portions of the territory of the other sons, and war among them followed, which ended in leaving C. in possession of a large kingdom in the w. part of the empire. When Louis died, C. undertook to succeed him as the emperor, and made an alliance with his brother Louis, the German. In 841, C. defeated his rival and eldest brother, Lothaire. In 843, the treaty of Verdun confirmed C. in possession of the kingdom, which comprised all France west of the Meuse, Saone, and Rhone, and Spain from the Ebro to the Pyrenees. But the government of C. was weak; the Norsemen pillaged the country almost without resistance; and finally the people, in despair of relief, called in the aid of his brother Louis, who drove C. from the country for a time. But C. had the church on his side, being entirely under control of the bishops, and in 875 he was crowned emperor by the pope. Louis was too strong for him, however, and he never to any great extent recovered his power. He died in 877, near mont Cenis, while on his way against the Saracens at the request of the pope.

CHARLES II., THE FAT, 832-88; King of the Franks and emperor of the Romans, third son of Louis the German. From his father, C. inherited Swabia, in 880, the death of his brother Carloman of Bavaria made him king of Italy; in 881, he was crowned emperor; the death of Louis of Saxony in 882, also a brother, brought him all Germany, and that of Carloman, the French king, in 885, left him all France; and so by no effort of his own, but by natural causes solely, C. became sovereign of all the dominions of Charlemagne. But he was a weak, gluttonous creature, more intent upon

the pleasures of the table than upon matters of state. The Norsemen sailed up the Seine and laid siege to Paris, and C., instead of making even an attempt at resistance, bought them off with 700 pounds of silver and a free passage to the upper Seine and Burgundy, where they might ravage at will. In 887, C. was deposed by his people, and died the next year in a cloister.

CHARLES III., THE SIMPLE, 879-929; King of France; posthumous son of Louis the stammerer. By the death of his rival, Charles the fat, in 898, he obtained possession of the whole kingdom. The most conspicuous act of his reign was the cession to the harassing Norsemen of the territory afterwards known as Normandy, on condition that the heathen should be baptized, that Rollo (Hrolf Ganger, or Ralph the walker, a Danish pirate chief, and the ancestor of William the conqueror, of England) should marry Charles's sister, and become a duke and vassal of the crown. In 922, the barons rebelled against Charles, and elected Robert, brother of the previous king, in his place; but Robert was killed by Charles's own hand in the battle of Soissons, though that did not secure to him the victory. The barons then chose for king Raoul, duke of Burgundy. After many failures, misfortunes, and a long imprisonment, Charles died at Peronne.

CHARLES IV., THE FAIR, 1294-1388; King of France and Navarre; third son of Philip the fair, succeeded his brother Philip V., in 1322. The chief purposes of his policy were to free the country from the Lombards, and from the exactions of the barons and the judges. He also did something towards improving the condition of the Jews, and assisted his sister Isabella in her contest with her husband, Edward II. of England. In 1325, being supported by the pope, Charles made an unsuccessful effort to attain the imperial crown.

CHARLES, Count of Anjou and Provence, King of Naples and Sicily, about 1220-85. He was the ninth son of Louis VIII. of France, and wedded Beatrice, heiress of Provence, after scattering his rivals by the aid of an army furnished by his brother, Louis IX. His next adventure was on a crusade to the Holy Land in company with his brother, when both were taken prisoners. Returning to Provence, Charles resumed his authority, and began to cherish high ambitions. He first assisted Margaret of Flanders, in a plan to set aside the children of her husband by a former wife, for the aggrandizement of her own offspring, for which Charles was to receive the province of Hainault; but Louis interfered and Charles was compelled to relinquish Hainault for a sum of money. About this time the pope, Urban IV., requested Charles to assume the crown of the Two Sicilies, to assist in the overthrow of the bastard Manfred, the Ghibelline king; and in 1265, Charles was crowned at Rome; a crusade was preached against Manfred, who was taken and killed; Conradin, the legitimate heir, was also betrayed, captured, and murdered; a like fate was dealt out to many Italian nobles; estates were confiscated to reward the French mercenaries; and they established over Sicily an arbitrary and brutal rule. Charles aimed at becoming the head of the eastern empire. With this intent he accompanied his brother on another crusade; but the venture failed in consequence of a great storm and the breaking out of the plague. Charles also incurred the enmity of the pope, Nicholas II., by refusing to accept the hand of his niece for Charles's grandson; so Nicholas went over to the Ghibellines, and took from Charles his titles. But Nicholas died in 1280, and Charles procured the election of a Frenchman, Martin IV., to the chair of St. Peter, in return for which Charles was made senator of Rome, and his rival, the emperor Michael Palæologus, was excommunicated. Another expedition was ready for the east, when news was brought of the rebellion, afterwards known as the Sicilian Vespers (see *ante*); the people of Sicily had risen against their conquerors, and on Easter Monday, 1282, nearly exterminated the French in all Sicily. Charles at once sent his fleet against Messina, refusing all offers of capitulation; but the city held out until assistance came from Don Pedro of Aragon, and Charles's fleet was burned. Despairing of other means of success, Charles challenged Don Pedro to single combat; the latter accepted, but only Charles appeared in the list. Soon afterwards Charles's son was defeated and taken prisoner; and in 1285, Charles himself fell ill and died at Poggia.

CHARLES III., OF DURAZZO, 1345-87; King of Naples and Hungary. His father, who had rebelled against the queen, Joanna I. of Naples, died in prison; and the queen adopted the son, but afterwards displaced him in favor of Louis of Anjou, the father of Charles V. of France. Charles made an alliance with the king of Hungary, and set out to invade Naples. At Rome he was crowned king by the pope; thence he went to Naples, captured the queen, and had her assassinated. Three years later he was invited to accept the crown of Hungary by the nobles, who were dissatisfied with the rule of queen Elizabeth, and was crowned on the last day of the year 1386. Five weeks afterwards Elizabeth caused him to be murdered in her own presence. As he and his kingdom of Naples were under papal interdict, his body remained unburied for five years.

CHARLES I., b. 1839; Prince of Roumania, second son of prince Charles Anthony of Hohenzollern. In 1866, Charles was elected president of Roumania by an almost unanimous vote. He found the country in a wretched condition, the treasury empty, education unprovided for, and the people divided into warring political factions. By

energy and good statesmanship he greatly improved matters, and when the Russo-Turkish war began he seized the occasion to proclaim Roumania's entire independence of Turkey, and such a declaration was officially made by the chambers. In 1869, Charles married princess Elizabeth of Wied.

CHARLES II., 1661-1700; King of Spain; son of Philip IV. He was but four years old when his father died, the regency being in the hands of the queen, Anna Maria of Austria. During her rule, Spain was much weakened by an unsuccessful war with France and by the loss of Sicily. In 1675, Charles assumed the government, taking for his chief adviser Don John, an illegitimate son of the late king. By marrying Louise of Orleans, a niece of Louis XIV., Charles maintained harmony with France for several years. After her death, Charles married a sister of the emperor, Leopold I., and in 1694 he joined Leopold in a war against France. The war was speedily concluded by the peace of Ryswick, 1697, and as Charles was childless there was a long negotiation concerning the succession, ended through the influence of the pope, who secured the crown for the grandson of Louis XIV., Philip Bourbon, who ruled Spain as Philip V.

CHARLES III., 1716-88; King of Spain, second son of Philip V., and great-grandson of Louis XIV. of France. Parma, Piacenza, and Tuscany having fallen to Spain, Charles, at the age of 15, was furnished with an army and given rule over those countries. At 18 he conquered the Two Sicilies, and the emperor was obliged to acknowledge him as king. On the death of his brother, Charles succeeded to the Spanish throne, in 1759. He was a man of ability and liberal ideas, and made many reforms, especially in financial administration. The Jesuits were banished, and an unsuccessful effort was made to bring the inquisition under the control of the civil power. He endeavored to put a stop to brigandage and to Algerine piracy; and interested himself in the development of commerce, and arts and sciences. In 1763, he ceded Florida to England in exchange for Cuba, and some years later he joined France in sending assistance to the American colonies, then engaged in the war for independence. At the close of the war, Florida was again given to Spain. He made an unsuccessful attempt to rescue Gibraltar from the English. Charles died in Madrid after a reign of 29 years.

CHARLES IV., 1748-1819; King of Spain, son and successor of Charles III. When very young, Charles married his cousin, Maria Louise of Parma, who soon acquired great influence over him. The government was conducted chiefly by Manuel Godoy, a handsome guardsman who gained the friendship of both the queen and her husband, and was made duke of Alcudia, and minister of foreign affairs. Godoy concluded peace with the French republic in 1795, after an unsuccessful attempt on the part of the king to assist his relative, Louis XVI. Soon after this peace an offensive and defensive alliance was made with France, and Spain speedily became involved in war with Portugal and also with England, the main event of which was the destruction of the Spanish fleet by Nelson at Trafalgar in 1805. In 1807, Charles made with Napoleon a secret treaty according to which Portugal was to be seized by the French and Spanish, and the greater part to be divided between Godoy and the queen of Etruria, and Charles was to assume the title of emperor of Amercia; at the same time, 16,000 Spanish troops were to be sent to the assistance of the French in Denmark. While this was going on, Napoleon was intriguing with Don Ferdinand, the heir to the throne, who was soon after discovered in a plot to assassinate his father. Though pardoned, Ferdinand continued to do all that he could to arouse ill feeling against the court, and in 1808, Charles was so alarmed at disturbances in Madrid, that he abdicated in Ferdinand's favor. Charles declared immediately that this act was not voluntary; but the matter was decided by a meeting with Napoleon at Bayonne, urged by Godoy, who was moved by fear of Ferdinand, and also by the queen. Charles surrendered the crown to Napoleon (who gave him a pension of six millions of francs, and the castle and grounds of Chambord), refusing again to assume authority, although he might have done so, his son being very unpopular.

CHARLES IX., 1550-1611; king of Sweden, the fourth son of Gustavus Vasa. The Swedish crown belonged to Charles's nephew, Sigismund, king of Poland; but as he was a Roman Catholic, Charles was appointed to direct the government till Sigismund signed a decree establishing the Lutheran religion in Sweden. After many attempts at accommodation, Sigismund was formally deposed in 1604, and Charles was elected king. He had wars with Poland, Russia, and Denmark, and when 60 years old he challenged the king of Denmark to single combat, but the Dane did not respond. Charles founded the university of Gothenburg, and made a new code of laws. He wrote a rhymed chronicle of the war with Poland.

CHARLES XV., 1826-72; King of Sweden and Norway, succeeding his father, Oscar I., who was a son of Charles XIV. The rule of C. was liberal and popular. The most important event was the change (in 1866) in the constitution of the parliament, which from that time has consisted not of four, but of two chambers, one elected by the provincial representatives and the other by the people. Charles's kindly nature was shown in his firm refusal to sanction capital punishment. He had a taste for literature and art, and published a volume of poems. In 1850, he married Louisa, daughter of the king of the Netherlands, by whom he had one daughter, who became the wife of prince Frederick of Denmark.

CHARLES, ELIZABETH RUNDLE, b. about 1826, the wife of Andrew P. Charles, of London. She has written *Chronicles of the Schorberg-Cotta Family; Diary of Mrs. Kitty Trevelyan*; and other popular works of fiction.

CHARLES, JACQUES ALEXANDRE CÉSAR, 1746-1823, a French physicist, noted for skill in experiments and public demonstrations. He made the first balloon to hold hydrogen gas, with which a successful ascent was made. He was the inventor of a number of optical instruments.

CHARLES AUGUSTUS, 1757-1828, grand duke of Saxe-Weimar. He assumed the government in his eighteenth year, and the next year entered the Prussian army, in which he remained until the defeat at Jena in 1806, when he became a member of the Rhenish confederacy and furnished aid to the French. In 1813, he joined in the coalition against Napoleon, and took command of an army of Saxons, Hessians, and Russians. He fought among the allies in 1815, and the congress of Vienna rewarded his services by enlarging his principality and making it a grand duchy. Charles was an intimate friend of Goethe, Wieland, and other men of letters.

CHARLES CITY, a co. in s.e. Virginia, on the James and Chickahominy rivers; 184 sq.m.; pop. '70, 4,979-3,153 colored. Productions, corn, wheat, oats, etc. Co. seat, Charles City Court House.

CHARLES MIX, a co. in s.e. Dakota, on the Missouri river; pop. '70, 152, of whom 117 were Indians. Co. seat, Greenwood.

CHARLES RIVER, a stream rising in central Massachusetts, and flowing easterly to Boston harbor. It affords valuable water-power in many places, and in its lower course its banks are lined with large and small manufacturing villages.

CHARLESTON, a co. in e. South Carolina, on the ocean, and including several islands; 1906 sq.m.; pop. '70, 88,363-60,603 colored. The Santee river is the n.e. border, and the Ashley, Edisto, and Cooper rivers intersect the county. The surface is low and level, and much of the soil is very rich, producing sea-island and short staple cotton, rice, corn, sweet potatoes, etc. The South Carolina, the Savannah and Charleston, and the North-eastern railroads intersect. Co. seat, Charleston.

CHARLESTON, a village in Coles co., Ill., on the St. Louis and Indianapolis railroad, 35 m. w. of Terre Haute, Ind. It is the county seat, and has a medical college, some manufactures, and the trade of a productive agricultural district. Pop. '70, 2,849.

CHARLESTON (*ante*), the chief city of South Carolina and capital of Charleston co., stands upon a peninsula formed by the confluence of the Ashley and Cooper rivers, in lat. 32° 45' n., long. 79° 57' w., 7 m. from the Atlantic ocean. The harbor, formed by the junction of the two rivers, and land-locked on three sides, with a depth of water of from 40 to 50 ft., is one of the best on the coast. It is defended at the mouth by four fortresses, fort Moultrie, fort Sumter, castle Pinckney, and fort Ripley. The entrance to the harbor, on account of shifting sand-bars and the uncertain depth of the water, would sometimes be difficult were it not for the floating lights and bell-boats provided by the government. The water on the bar is only 18 ft. deep, but the channel is being deepened by the government. The city covers an area of more than 5 sq. m., has nearly 10 m. of water front, and more than 50 m. of streets. The latter intersect each other mostly at right angles, and some of them are spacious. The houses, instead of being built in blocks, are generally separated from each other by gardens, shade trees, and shrubbery, giving the city a peculiarly picturesque appearance, while greatly increasing its area. Charleston was founded in 1680 by an English colony. Its growth at first was slow, but with the development of the cotton traffic its commercial importance was greatly increased. The pop. '60 was 48,409, of which nearly one-half were colored. The war of the rebellion, which begun here in the spring of 1861 in the compulsory evacuation of Fort Sumter by the U. S. garrison under command of gen. Robert Anderson, and a great fire which occurred a few months later, paralyzed the business and greatly diminished the population of the city. Commerce indeed, between 1860 and 1865, was utterly destroyed. The wharves decayed, the docks were filled up, and the railroads leading into the interior were torn up. It was not until more than a year after the peace that the city was again made a port of entry; but from that time industry and commerce revived and have since steadily increased. The census of 1870 showed a very slight increase of population in comparison with that of 1860, the proportion of colored persons to white being about the same, 22 to 26. The population by the census of 1880 was 49,999; 24,005 being white, and 25,994 being colored. A large wholesale trade is carried on with the interior, an extensive region of country drawing its supplies of merchandise from this source. The overland trade with St. Louis, Chicago, and other cities of the north-west in flour, bacon, grain, etc., is rapidly increasing. Rice, cotton, lumber, naval stores, and phosphate rock are the principal exports. In the extent of the cotton trade, Charleston ranks next to New York and New Orleans. The manufacture of fertilizers from marl and phosphate rock has been developed since 1868 and is very extensive. Early vegetables, grown in the suburbs, are exported in large quantities to New York, Boston, and other northern cities. The whole amount of coastwise imports is very large and constantly increasing. Manufactures of iron, wood, and phosphate, employ much capital, and afford occupation for

upwards of 3,000 people. There are several large mills for removing the husk from rice and preparing it for market. A large portion of the rice raised in South Carolina and Georgia is cleaned at these mills. The valuation of property by the census of 1870 was over \$50,000,000. The state assessment for 1872 was less than this by \$10,000,000, the city assessment for 1873 was less by more than \$20,000,000. In 1870 the number of dwellings was 6,861; the number of families, 9,098; the number of persons engaged in mechanical occupations, 18,705. There are seven banks of discount, with a capital of more than \$3,000,000, and five savings banks, with deposits amounting to more than \$1,000,000. The public squares are few and small, the battery near the water's edge, being the principal public resort. There are 3 daily and 5 weekly newspapers, and about 40 churches, of which 11 are Episcopal, 8 Presbyterian, 5 Roman Catholic, 5 Methodist, 4 Baptist, 3 Lutheran, and 1 Unitarian. The most noted church edifice is St. Michael's (Episcopal), built in 1752. It has a fine chime of bells, and its tower can be seen far out at sea. St. Philip's is the oldest church organization, but its house of worship is not so old as that of St. Michael's. In the graveyard adjoining St. Philip's lie the remains of many noted persons, including Gadsden, Rutledge, Pinckney, and Calhoun. Magnolia cemetery, near the northern boundary of the city, contains many fine monuments. The principal benevolent institutions are the orphan house, with an endowment of \$190,000, and over 300 inmates; the Roman Catholic orphan asylum, with more than 100 inmates; the almshouse; the asylum for the aged and infirm; the city hospital; and an asylum for colored orphans, supported by the state. The principal public buildings are the U. S. arsenal and citadel, the market, city hall, court-house, orphan house, academy of music, custom-house, post-office, Charleston hotel, and Mills house. Three steam railroads have their center here, and there are horse railroads connecting the different parts of the city with each other. The streets are lighted with gas, and many of them are well paved. The schools of the city are under the control of commissioners elected by the people and a superintendent appointed by the commissioners. In 1872, there were 8 public schools (5 grammar and 3 primary); number of children of school age, 12,727, of whom 5,068 were enrolled; number of teachers 68, all but four of them males; total school expenditures over \$40,000 annually. There are also a considerable number of private schools. Charleston college, founded in 1871, in 1872 had 5 instructors, 50 students, and a library of 8,000 volumes. The state medical college, at the same date had 9 professors. The Charleston library, founded in 1748, has 14,000 volumes, and the apprentices' library is a valuable collection. Charleston was among the first of the principal places in the south to enlist in the revolutionary struggle of 1776. It was captured May 12, 1780, after a siege of six weeks, by 12,000 British regulars under sir Henry Clinton, and evacuated Dec. 14, 1782. It was the center of the nullification movement of 1830, which was put down by Andrew Jackson; and the war of the rebellion had its beginning here in the bombardment of Fort Sumter, which aroused the northern people to a stern resistance. The city remained in the possession of the confederates until the surrender of Columbia, the state capital, to Sherman, when it was evacuated by the confederate forces, and all the public buildings, stores, cotton warehouses, shipping, etc., were fired by order of gen. Hardee, the confederate commander. When the union forces took possession, Feb. 18, 1865, they did all that they could to rescue the city from destruction. During the war many buildings were destroyed, and the towers and steeples of the churches riddled with shot and shell.

CHARLESTON (Post office, KANAWHA COURT-HOUSE), the capital of West Virginia, on the Chesapeake and Ohio railroad and the Kanawha river, at the junction of Elk river; 130 m. s.w. of Wheeling; pop. '70, 3,162. The Kanawha is navigable to the Ohio. Charleston is in a region productive of timber, coal, iron, and salt, and is an important shipping point. The salt springs are just above the city on both sides of the river, and more salt is made here than in any other place in the country except Syracuse, N. Y. The state-house is the most conspicuous building. There are a Roman Catholic seminary, and several high schools. The seat of the state government was fixed here April 1, 1870.

CHARLESTOWN (*ante*), now part of Boston, formerly a city of Middlesex co., Mass. It is situated on the northern bank of the Charles river, and is connected with Boston by two free bridges. The Mystic river, which unites with the Charles at this point, forms the boundary on the e. and north. The pop. in 1873, when the city was annexed to Boston, was 28,373. From the territory of Charlestown, originally very large, several towns have been taken on its northern side. The surface of the remaining portion is very uneven, two eminences, Bunker and Breed's hills, rising near the center, and affording many fine building sites. On Bunker hill was fought a celebrated battle of the revolution, June 17, 1775, commemorated by a granite shaft erected on the summit and rising to the height of 220 feet. The corner-stone of this monument was laid in 1825 by gen. Lafayette, and the work was finished in 1843. The attempt of the Massachusetts committee of safety to fortify this eminence was the immediate occasion of the battle, in the course of which the town was burned by the British, being set on fire by shells from Copp's hill in Boston, and by men who were sent across the Charles for that purpose. C. is well built, having some fine streets and residences. It has an abundant supply of water from Mystic lake, excellent

schools, 15 churches of various denominations, a public library of 15,000 volumes, a fund of \$23,000 for the benefit of the poor, and a home for aged and indigent women. The state prison was located here from 1805 to a very recent period, and the buildings used for that purpose are still standing. A navy-yard of the United States, covering more than 70 acres of ground and having all the appointments required for such an establishment, has existed here since 1793. C. is also a place of considerable business. It has manufactories of steam engines, boilers and machinery, of stone and brass-ware, gas fixtures, mechanics' tools, leather, draw-pipes, sugar, soap, etc.

CHARLESTOWN, the seat of justice of Jefferson co., W. Va., on a branch of the Baltimore and Ohio railroad, 10 m. s.w. from Harper's Ferry; pop. '70, 1593. It is in a fine agricultural district. It was in this village that John Brown was tried, condemned, and hanged Dec. 2, 1859.

CHARLEVOIX, a co. in n.w. Michigan, on lake Michigan and Green river; 500 sq.m.; pop. '70, 1724. Grand Traverse bay bounds the county on the w., and Little Traverse bay on the north. The chief business is agriculture. Co. seat, Charlevoix.

CHARLEVOIX, a co. in the province of Quebec, Canada, forming a triangle, one side of which runs 80 or 90 m. along the n.w. bank of the St. Lawrence, reaching nearly to the Saguenay river; 5,224 sq.m.; pop. '71, 15,611, of whom all but nine were Roman Catholics. The surface is mountainous, and not well adapted to agriculture. It is intersected by five or six rivers that fall into the St. Lawrence, and one that joins the Saguenay. Chief town, Baie St. Paul.

CHARLEVOIX, PIERRE FRANÇOIS XAVIER DE, 1682-1761; a French Jesuit who was sent as a teacher to Quebec in 1705. After about five years he returned to France, and became professor of belles-lettres. He returned to Canada in 1720, and journeyed up the St. Lawrence and the lakes and down the Illinois and Mississippi to New Orleans, and thence went to Paris. His principal work is a valuable *History of New France* (or Canada), which was not published in English until 1865. He also wrote a history of Christianity in Japan, and a history of Paraguay.

CHARLOTTE, a co. in s. Virginia, on Staunton river; intersected by the Atlantic, Mississippi and Ohio, and Richmond, Danville and Piedmont railroads; 550 sq.m.; pop. '70, 14,513-9,613 colored. Surface hilly; productions, wheat, corn, oats, and tobacco. Co. seat, Marysville.

CHARLOTTE, a co. in s.w. New Brunswick, on the Maine border and the bay of Fundy; 1323 sq.m.; pop. '71, 25,882. The county is traversed by the New Brunswick and Canada, and the North American and European railroads. Ship-building and sea-fishing are the occupations of the greater portion of the inhabitants. Chief town, St. Andrews, at the mouth of St. Croix river.

CHARLOTTE, the seat of justice and an incorporated city of Eaton co., Mich., 20 m. s.w. of Lansing, on Grand River Valley division of the Michigan Central, at the crossing of the Peninsular railroad; pop. about 3,000. Lumber and agricultural products furnish the greater part of its trade.

CHARLOTTE, a city of North Carolina, the seat of justice of Mecklenburg co., on Sugar creek, and the Wilmington, Charlotte and Rutherford railroad, at the terminus of the North Carolina division of the Richmond and Danville, and the Charlotte, Columbia and Augusta railroads. The city is in the North Carolina gold region, and a mint was established in 1838, but closed in 1861 on account of the rebellion. Up to that date more than \$5,000,000 in gold had been deposited in the mint. There are several manufactories in the city. It was here that the "Mecklenburg Declaration of Independence" was adopted, May 31, 1775.

CHARLOTTE AUGUSTA, 1796-1817; daughter of George IV. and queen Caroline of England. She was well educated under the care of the bishop of Exeter and Lady Clifford. It was desired that she should wed the prince of Orange, but she loved and married prince Leopold of Saxe-Coburg, who, long after her death, became king of Belgium. She was married May 2, 1816; was delivered of a still-born child early in Nov. of the next year, and died, in consequence of malpractice, as was believed. Her officiating physician committed suicide. Her domestic life was most wretched, as her published letters show.

CHARLOTTE HARBOR, or BOCA GRANDE, an inlet in the gulf coast of Florida, 25 m. long, and 8 to 10 m. wide, with an entrance three fourths of a mile wide, and 30 to 40 ft. deep. There is a good harbor, sheltered from the sea by a number of islands. Wild fowl, fish, and oysters are plentiful.

CHARLOTTESVILLE, a village in Albemarle co., Va., 65 m. n.w. of Richmond, on the Orange, Alexandria and Manassas, and the Chesapeake and Ohio railroads. The place is the seat of the university of Virginia, founded by Thomas Jefferson; and Monticello, Jefferson's home, is but 3 m. distant. Pop. '70, 2,838.

CHARLTON, a co. in s.e. Georgia, on the Florida border, including a portion of the great Okefenoke swamp; 1000 sq.m.; pop. '70, 1897-401 colored. Productions, rice, cotton, tar, and turpentine. Surface level and soil sandy. Co. seat, Trader's Hill.

CHARNOCK, STEPHEN, D.D., 1628-80; an English non-conformist minister, educated at Cambridge. He began to preach in London, and went thence to Dublin, where he was successful. In 1660, he was silenced by the act of uniformity, and returned to London; he continued 15 years in and near that city, preaching, but without a settled congregation. Many of his sermons have been published, and his work on the *Attributes of God* is still highly valued. He was a vigorous and original, as well as judicious thinker; and as a writer he was vivid and clear.

CHARON'DAS, a lawgiver of ancient Greece, by some supposed to have been a disciple of Pythagoras. It is related that he fell a sacrifice to one of his own laws, by which it was made a capital offense to appear armed in a public assembly. On returning from a military expedition he hastened to quell a tumult, having his sword at his side. Being reminded by a citizen of his law, he replied, "Then I will seal it with my blood," and immediately plunged his sword into his breast.

CHAROST, ARMAND JOSEPH DE BETHUNE, Duc de, 1810-65; a descendant of Sully, the famous marshal. C. took part in the revolution of 1830 as a republican, and in 1833 was made a lieut. Afterwards he served in Algeria, and after the revolution of 1848 he was appointed under secretary of state. He was one of the zealous republicans in the national assembly, and one of the victims of Dec. 2, 1851, being imprisoned at Ham, and afterwards exiled to Belgium. In 1854, Napoleon III. expelled him from France, and he went to Holland and afterwards to Switzerland. He wrote a history of the campaign of 1815, in which he severely criticised Napoleon's generalship, and a history of the war in Germany in 1813.

CHARRIERE, or CHARRIERES, ISABELLE AGNÈTE DE SAINT-HYACINTHE DE, 1740-1805; a native of Holland, daughter of a Dutch baron, and married to a Swiss, who had been her brother's teacher. In 1786, appeared her most important book, *Caliste*, or *Letters Written in Lausanne*. She traveled in France and England, and was an intimate friend of Benjamin Constant. She was a brilliant and beautiful woman, but, owing to loss of her estate, the latter years of her life were spent in strict seclusion.

CHARRON, PIERRE, 1541-1603; a French philosopher, one of the 25 children of a bookseller of Paris. He studied law at Bruges, and began practice in Paris, but not having immediate success, he went into the church, and rose to eminence as a preacher. At Bordeaux he formed a short but famous and important friendship with Montaigne, who, on his death in 1592, requested C. to bear the arms of the Montaigne family. In 1594, C. published *Le Trois Verites*, in which he seeks to prove that there is a God and a true religion, and that the true religion is the Roman Catholic. This was followed by a book of sermons, and in 1601 came his most remarkable work, *De la Sagesse*, a complete popular system of moral philosophy. This work brought upon its author the most violent attacks, but a second edition was soon called for. This, after much opposition, began to appear in 1603, but only a few sheets had been printed when C. died suddenly in the street.

CHARTER OAK, a famous tree that stood in Hartford, Conn., until blown down by a storm, in Aug., 1856. Its name was given because when sir Edmund Andros, governor of New England and New York, came to Hartford in 1687, by the order of James II., to demand the colonial charter, that document was hidden in a hollow of the tree by capt. James Wadsworth, and thus preserved. Though some writers have cast doubt on this interesting tradition, it is generally accepted by historians.

CHARTIER, ALAIN, the most distinguished man of letters in France in the 15th c., supposed to have been born about 1380. After studying at the university of Paris, he is supposed to have entered the service of Charles VI., and after that to have followed the fortunes of Charles the dauphin, afterwards Charles VII. The lot of C. was cast in troubled times; he felt the agony of Agincourt, and saw the rise of the maid of Orleans. The story of the famous kiss bestowed by Margaret of Scotland, wife of that Louis the dauphin who was afterwards to be known as Louis XI., "on that precious mouth from which has issued so many witticisms and virtuous sentences," is interesting if only as a proof of the high degree of estimation in which the ugliest man of his day was held. His best works are said to be *Le Livre des Quatre Dames*, which was called forth by the battle of Agincourt, and *Le Quadrilogue-Invectif*, a patriotic dialogue.

CHARTRES, ROBERT PHILIPPE LOUIS EUGÈNE FERDINAND D'ORLEANS, Duc de, b. 1840; the youngest son of the late duke of Orleans, and grandson of Louis Philippe. His father died when he was but two years old, and when he was eight the revolution drove him into exile. He was cared for at Eisenach, in Germany, but soon afterwards joined his family, who were in England. In 1860, he traveled in the east, and in 1861 came to the United States with his elder brother, the count of Paris. Both of them served for a time in the war of the rebellion on gen. McClellan's staff; but they went to England in the summer of 1862. In June, 1863, Robert married his cousin François Marie Amelie d'Orleans, by whom he has five children. After the revolution of Sept., 1870, he returned *incognito* to France, and served in gen. Chanzy's army; and in 1871, after the repeal of the act banishing the Orleans family, he was appointed a maj. in the

army and served in Algeria. He has published his travels, and his father's posthumous work on the campaigns of the French army in Africa in 1835 and 1839.

CHASE, a co. in e. central Kansas, on the Neosho river and its affluents, intersected by the Atchison, Topeka and Santa Fe railroad; 757 sq.m.; pop. 70, 1975. It is an agricultural region. Co. seat, Cottonwood Falls.

CHASE, IRAH. D.D.; 1793-1864; educated at Middlebury college and Andover theological seminary, and ordained in 1817. He labored for a time as a Baptist missionary in West Virginia, and in 1818 became professor in a theological school in Philadelphia. The school was transferred to Washington, and he remained in his professorship seven years. In 1825, he aided in establishing a theological school at Newton Center, Mass., in which he was a professor for nearly 20 years. In 1830, he assisted in founding the Baptist mission in France. Among his works are *The Life of John Bunyan*; *The Design of Baptism*; *The Work Claiming to be the Constitution of the Holy Apostles, revised from the Greek*; *Infant Baptism an Invention of Man*; and many sermons and essays.

CHASE, PHILANDER, D.D., 1775-1852; graduated at Dartmouth in 1795, and ordained to the ministry of the Episcopal church in 1798. He labored as a missionary in western New York, and in 1811 became rector of Christ church in Hartford, Conn. In 1817, he went to Ohio, where, two years afterward, he was chosen bishop. A few years later he laid the foundation of Kenyon college and Gambier theological seminary. In 1835, he became bishop of Illinois, where he was instrumental in founding Jubilee college, at Robin's Nest, where he died. Among his works are *A Plea for the West*; *The Star in the West, or Kenyon College*; *Reminiscences*, etc.

CHASE, SALMON PORTLAND, 1808-73; b. N. H. He was the son of a farmer, and a nephew of bishop Chase, who supervised his earlier education. Graduating from Dartmouth college in 1826, he opened a school for boys at the national capital, and in 1830 was admitted to the bar, where almost his earliest work was the preparation of an edition of the statutes of Ohio with annotations, and a sketch of the history of the state. This assisted him in gaining practice, and in 1834 he was appointed solicitor in Cincinnati for the bank of the United States. His first effort in a cause touching slavery was in defense of a colored woman claimed as a fugitive. He maintained that the fugitive slave law of 1793 was void, because unwarranted by the federal constitution. In the same year he defended James G. Birney (subsequently the candidate of the abolitionists for president), who had been prosecuted under the state law for harboring a slave. In this case he argued that slavery was a local institution, and that as the slave had been brought into a free state by his master, he was in fact free. In 1846, in the Van Zandt case before the U. S. supreme court, he took the ground that under the ordinance of 1787 no fugitive from service could be reclaimed from Ohio unless he had escaped from one of the original states; that it was the understanding of the makers of the constitution that slavery was to be left to the disposal of the several states, without sanction or support from the federal government; and that the clause in the constitution relating to persons held to service was a compact between the states, conferring no power of legislation on congress, and was never intended to confer such power. In 1841, he was prominent in the organization of the liberty party of Ohio, which nominated him for governor. In the national liberty convention at Buffalo in 1843, and in subsequent conventions until the nomination (in 1848) of Martin Van Buren for president, C. was a leading member, and in most cases directed the proceedings. In Feb., 1849, he was chosen U. S. senator from Ohio, his vote coming from all the democrats and a few free-soil members. He acted generally with the democrats until the nomination (in 1852) of Pierce on a strongly pro-slavery platform, when he withdrew and undertook the formation of an independent democratic party. The debate on the Nebraska bill gave him an opportunity to oppose the famous compromise, to which he moved an amendment looking to the exclusion of slavery from all the territories; but it was not adopted. Through all the contest for the repeal of the Missouri compromise and the Kansas debate, he was foremost in opposition to slavery extension. In the mean time, he was heard on other important subjects. He favored internal improvements by the general government, and supported the free homestead movement, and cheap postage. In 1855, he was elected governor of Ohio by the votes of the opponents of the Nebraska bill, and he was re-elected in 1857. His name was before the first national convention of the republican party (1856) for president, but was withdrawn at his own request. He was named, also, in the convention that nominated Lincoln, but was not pressed. In 1861, he was appointed secretary of the treasury, and held the office until July 30, 1864, when he resigned. In this position the arduous duties of sustaining the national credit in the struggle with the rebellion devolved in a great degree upon him; and he proved equal to the occasion. The death of Roger B. Taney in Oct., 1864, made a vacancy in the chair of the chief justice of the U. S. supreme court, which was immediately filled by the appointment of C., in which capacity he presided at the trial on the impeachment of Andrew Johnson in Mar., 1868. About this time, his dissatisfaction with the course of the republican party became so decided as to throw his influence on the side of the democrats, at whose national convention, July, 1868, he was prominently, though unsuccessfully, urged as a presidential candidate. In 1870, he was stricken with paralysis, the effects of which lasted until his death.

CHASE, SAMUEL, 1741-1811; one of the signers of the declaration of American independence; son of an Episcopal clergyman, and a lawyer in Annapolis, Md. He was one of the earliest and strongest friends of colonial liberty; was a member of the continental congress for four years, and in 1776 went with Charles Carroll and others on the fruitless errand to induce the Canadians to join in the rebellion against English rule. He filled several judicial offices in Maryland, and in 1796 was appointed associate justice of the U. S. supreme court. In 1804, John Randolph brought about his impeachment for misdemeanor in the conduct of political trials, but he was found not guilty on trial by the U. S. senate. He remained on the supreme court bench until his death.

CHASLES, MICHEL, b. 1793; a French mathematician, educated at the Paris polytechnic school. In 1841, he was appointed professor of geometry in that institution. Among numerous essays and books of his productions are: *Historical Views of the Origin and Development of Methods in Geometry*; *History of Arithmetic*; and *Treatise on Superior Geometry*. In 1851, he became a member of the academy, and in 1867, he reported to that body that he was in possession of 27,000 letters and documents of great antiquity and value, among them letters and papers believed to have been written by Dante, Petrarch, Rabelais, Julius Cæsar, Shakespeare, and other persons of renown. Only about 100 of these were genuine, though they completely imposed upon C. and other good judges. The forger, Irene Lucas, was imprisoned two years for forgery and fraud.

CHASLES, VICTOR EUPHÉMION PHILARÈTE, 1798-1873; a French writer who traveled in the United States about 1820-23. In 1837, he was director of the Mazarin library, and in 1841, professor of German language and literature in the college of France. He published in 20 vols. *Comparative Studies of Literature*; wrote tales and books of travel; and prepared editions of classic authors.

CHASSELOUP-LAUBAT, FRANÇOIS DE, Marquis, 1754-1833; a French military engineer who conducted the works at Maestricht in 1794, at Mentz in 1795, and in the Italian campaigns up to 1812; when he was appointed senator. Louis XVIII. made him a marquis.

CHASSELOUP-LAUBAT, JUSTIN NAPOLÉON SAMUEL PROSPER DE, Marquis, 1805-73; in 1837, a member of the French chamber of deputies and afterwards counselor of state. In 1849, he was again a member, and then and afterwards a supporter of Louis Napoleon, who made him minister of marine. He was for some years the president of the colonial board of Algeria. In 1869, he presided over the council of state until the accession of Ollivier's administration.

CHASSEPOT, a breech-loading rifle invented by Antoine Alphonse Chassepot, b. Mar. 4, 1833; he was attached, in 1858, to the government workshops of St. Thomas at Paris, of which he was made director in 1864; and was afterwards officially attached to the national manufactory of arms at Chatellerault, near Poitiers. He took out patents for his invention, and the royalty has brought him a large income. He was decorated with the cross of the legion of honor in 1866. The first model of the C. was exhibited in 1863; but it was not introduced in the French army till after the Prussians had proved the efficiency of the needle-gun in the war of 1866 against Austria; it was used successfully in the Franco-German war of 1870. The C. is an improved needle-gun; the fulminate is in a paper wad which forms the rear of the cartridge envelope; the gas check is a cylindrical ring of vulcanized India rubber, which is pressed against the surface of the chamber when the explosion takes place; the cartridge envelope is of silk or linen, with a caliber of .433 inch. The gun has 4 grooves, and can be fired 12 times a minute at a range of 1200 yards. An improved form of the C. has been recently introduced in France, in which the metallic cartridge can be used.

CHASTELAIN, GEORGES, 1403-75; in the service of Philip the good of Burgundy, at whose request he compiled the *Grande Chronique*, or history. Of their work, which was to have filled six volumes, only two fragments of importance are known to exist—the first extending from 1419 to 1422; the second, with large breaks in the text, from 1461 to 1474.

CHASTELARD, PIERRE BOSCOBEL DE, 1540-63; a French poet, a scion of the house of Bayard. The name of Chastelard is romantically connected with that of Mary queen of Scots. He was a page in the house of marshal Danville, whom he accompanied in his journey to Scotland as escort of Mary in 1561. C. returned to Paris in the marshal's train, but left almost immediately for Scotland bearing letters of recommendation to Mary from Montmorency, and also the "regrets" addressed to the queen by Pierre Ronsard, C.'s master in the art of song. The enthusiastic page fell in love with the queen, who is said to have encouraged his passion. Copies of verses passed between them, and she lost no occasion of showing herself partial to his person and conversation. The young man hid under her bed, where he was found by the maids of honor; but Mary pardoned the offense, and the old familiarity between them was resumed. Again C. was so rash as to violate her privacy; but he was discovered, seized, sentenced, and hanged the next morning. He met his fate consistently, reading, on his way to the scaffold, Ronsard's "Hymn to Death;" and turning at the moment of doom towards Holyrood; addressing to his unseen mistress the famous farewell: "Adieu!

thou so fair and so cruel; thou killest me, and yet I cannot cease to love thee!" Another story is that he simply ejaculated "Cruel queen!" emphasizing the words by a threatening gesture.

CHASTELER, JEAN GABRIEL JOSEPH ALBERT, Marquis de, 1763-1825. He was in the Austrian service as a general officer, and served in the war of the Bavarian succession, and in the war against the Turks. He defended Namur against the French, participated in the third partition of Poland, and was sent to Russia to engage the emperor Paul in a coalition against France. In 1799, he was in the Russo-Austrian army, and was seriously wounded before Tolona, Italy. He fought in the Tyrol against Napoleon, but was beaten by Lefebvre, May 13, 1809, and was compelled to fly to Hungary. When the Lombardo-Venetian kingdom was established, he was made governor of Venice.

CHASTELLUX, FRANÇOIS JEAN, Marquis de, 1734-88; a French soldier and author, distinguished in the seven years' war in Germany, and in the army of Rochambeau in the American revolution, where he held the rank of maj.gen. His chief works are *De la Félicité Publique; Voyages in North America*; and a *Discourse on the Advantages Resulting to Europe from the Discovery of America*.

CHÂTEAUGAY, a s.w. co. in the province of Quebec, Canada, on the St. Lawrence, drained by the Chateaugay, the Noire, and other rivers; 250 sq.m.; pop. '71, 16,166. It is generally level, and the soil is fertile. Chief town, St. Martine.

CHÂTEAUGUAY, SIEUR DE. See LE MOYNE.

CHÂTEAU-THIERRY, a t. in the department of Aisne, France, on the right bank of the Marne; pop. '72, 5,347. It has a commercial college, a public library, and manufactories of linen, cotton, leather, and earthenware. There is a marble statue of La Fontaine, the fabulist. The town takes its name from a castle said to have been built by Charles Martel for Thierry IV., the ruins of which are on an adjacent hill. The position of Château-Thierry has subjected it to many disasters. It was captured by the English in 1421, by Charles V. in 1545, by the Spanish in 1591; pillaged in the Fronde wars in 1652, and suffered severely in the Napoleonic campaign of 1814.

CHÂTEL, FERDINAND TOUSSAINT FRANÇOIS, Abbé, 1795-1857; ordained as a priest in 1818, serving as vicar to several French towns, and as chaplain in the army. In 1831, he founded a new sect in whose doctrines Christ was to be venerated only as a perfectly good man, and the confessional, fasting, and vows of chastity and celibacy were to be omitted. The authorities interfered in 1842 and closed his place of worship, but in 1848 he appeared again as an especial champion of women's rights. His public meetings were suppressed in 1850, and he passed his later years in the duties of a metropolitan postmaster.

CHATELET, the name of two old fortresses of Paris, believed by some to have been built in the time of Julius Cæsar. The grand C. was restored by Louis IX. and remodeled by other kings. It was demolished in 1802. It was the residence of counts of Paris, and became an important seat of the judiciary, as well as a prison. This fortress stood on the right bank of the Seine where is now the w. part of the place de Châtelet. The petit C. was on the other bank near the present place du Petit Pont. It was demolished in 1782. In earlier times it was one of the gates of the city.

CHATHAM, a co. in s.e. Georgia, on the ocean and the South Carolina border; 358 sq.m.; pop. '70, 41,297-24,518 colored. It is level and swampy, with fertile soil near the rivers. Rice, sweet potatoes, corn, and cotton are the chief productions. The Savannah, Alabama, and Gulf railroad intersects it. Co. seat, Savannah.

CHATHAM, a co. in central North Carolina, reached by the Chatham railroad, and drained by the Rocky, New Hope, Deep, and Haw rivers; 700 sq.m.; pop. '70, 19,723-6,830 colored. Chief productions, wheat, corn, oats, tobacco, butter, and coal. Co. seat, Pittsboro.

CHATHAM, a t. in Barnstable co., Mass., on the s.e. extremity of cape Cod, near the Cape Cod railroad; pop. '70, 2,411. Fishing is the business of the greater portion of the inhabitants. There are three important lighthouses in the township.

CHATHAM, a t. in Northumberland co., N. B., on the Miramichi river, near its entrance into Miramichi bay; pop. '71, 4,303. It has a Roman Catholic cathedral, a college, and a temperance hall. It is a port of entry, and has a large export trade in fish, lumber, etc.

CHATHAM, a t. in Kent co., Ontario province, Canada, on the Thomas river, 47 m. e. of Detroit, Mich.; reached by the Great Western railroad, and by steamboats from the lakes. It is in a rich agricultural district, and has a large trade in grain and lumber. Pop. '71, 5,873.

CHIATI, a cat, *felis mitis*, smaller than the ocelot, and something like the leopard, a native of South America. It greatly annoys farmers by destroying fowls, birds, and smaller animals. Like all of the cat kind, it hunts mostly in the dark.

CHATOYANT, a term to denote the changeable internal light seen in some minerals, such as "cat's eye." (See CAT'S EYE, *ante*.)

CHÂTRE, LA., a t. in the department of Indre, France, on the river Indre, 20 m. s.e. of Chateauroux; pop. '66, 5,167. There is a ruined castle, one of the towers of which is still used as a prison.

CHATTAHOO'CHEE, a co. in s.w. Georgia, on the Alabama border; 250 sq.m.; pop. '70, 6,059—3,405 colored. Agriculture is the chief business. Co. seat, Cusseta.

CHATTANOOGA, a city in Hamilton co., Tenn., on the Tennessee river, near the Alabama boundary; pop. '70, 6,093—2,221 colored. The river is navigable for steam boats about eight months in the year, and by light-draught boats at all times. Four railroads center at Chattanooga, and afford easy communication in all directions. The city is one of the most important shipping points in that section of the country. The region is rich in coal and iron, and there is abundance of water-power. At this point, in Oct., 1863, occurred one of the most important conflicts of the war of the rebellion. After the retreat of Rosecrans from the field of Chickamauga, in Sept., the confederates under Bragg sent a cavalry force across the Tennessee above Chattanooga, and seized several points on the railroad in order to cut off his supplies. Shortly afterwards, Grant relieved Rosecrans and assumed command of the department of the Tennessee, Cumberland, and Ohio. Thomas was appointed commander of the department of the Cumberland, Sherman was assigned to the department of the Tennessee, and Hooker, with the 11th and 12th corps, which had been transferred from the army of the Potomac, was sent across the river to make a flank movement against Bragg, while a force under William F. Smith was thrown across the river at Brown's ferry, below Chattanooga, to seize the points of Lookout mountain that commanded the passage of the river. These measures, which were executed Oct. 27, 28, and 29, were successful in restoring the connection between the union army at Chattanooga and its depot of supplies. Sherman's army having arrived, the movement against the confederates was begun Nov. 23. Thomas's troops attacked and carried the enemy's first line of rifle-pits at 2 p.m., and held it during the night. The next day the attack was renewed along the whole line. Thomas strengthened himself in his advanced position, repelling every effort of the enemy to recover the lost ground. Sherman succeeded in carrying Missionary ridge, and Hooker, after partially carrying Lookout mountain, intrenched himself in a strong position, compelling the abandonment of the mountain by the enemy during the night. On the 25th the battle raged from dawn till dark. Missionary ridge, Lookout mountain-top, and all the rifle-pits in the valley, were carried by desperate fighting. The confederate army was routed, and pursued by Sherman and Hooker back to Georgia. The union loss was between 6,000 and 7,000 in killed, wounded, and missing. The confederate loss in killed and wounded is estimated at 2,500; in prisoners, 6,000. The effect of this battle was to cut off Bragg from communication with Longstreet, and to force the latter to abandon the siege of Knoxville and retreat into Virginia.

CHATTOO'GA, a co. in n.w. Georgia, on the Alabama border, intersected by the C. river; 360 sq.m.; pop. '70, 6,902—1503 colored. The surface is somewhat mountainous. Limestone, marble, lead, and iron are found; and wheat, corn, oats, and cotton are raised. Co. seat, Summerville.

CHAUCI, an important tribe of ancient Germany, who dwelt between the Elbe and the Ems. Tacitus records that they were conspicuous for their love of peace and justice, being powerful but not ambitious, ready to resist aggression, but never provoking war. They finally merged into the wider designation of Saxons.

CHAUDET, ANTOINE DENIS, 1763-1810; a French artist, whose statue of *Œdipus*, finished in 1810, established for him a high reputation. He also excelled in designing and penciling; and illustrated the works of Racine for Didot. Among his statuary are "Paul and Virginia," "Sensibility," "Surprise," a silver statue of "Peace," and the "Napoleon" that crowned the Vendôme column. His wife, Jeanne Elizabeth Gabion, was his pupil in painting, and produced many fine pictures.

CHAUFFEURS, or GARROTTEURS, outlaws during the French reign of terror who roamed over the country in organized bands, under the lead of Johann Buckler, or Schinderhannes. They garroted men and women, and roasted their feet to compel them to disclose treasure. In 1803, vigorous measures were taken which resulted in their suppression.

CHAULIAC, or CHAULIEU, GUI DE, a surgeon of France, of the 14th c., who was physician to three of the popes of Avignon. In his profession he was far in advance of the time, and his works are still regarded as important. He is credited with laying the foundation of the modern principles and practice of surgery. One of his works describes the plague or black death of 1348.

CHAUMONOT, PIERRE MARIE JOSEPH, 1611-93; a French Jesuit missionary among the North American Indians. His work was chiefly among the Hurons of Canada, among whom he established missions and schools. He left a grammar of the Huron tongue. In 1658, he visited the Onondagas.

CHAUNCEY, CHARLES, LL.D., 1777-1849; son of the Connecticut attorney-general; became a member of the Philadelphia bar, where he won high rank.

CHAUNCEY, or CHAUNCY, CHARLES, LL.D., 1747-1823; a native of Massachusetts, admitted to the bar in 1768. and settled in New Haven. He was attorney-general of the state, and in 1789, judge of the superior court.

CHAUNCEY, or CHAUNCY, ISAAC, 1772-1840; a capt. in the U. S. navy. He began sea-faring life in the mercantile service, in which he was conspicuous for enterprise and energy. In 1799, he entered the navy as a lieut., and in 1802 was made acting capt. commanding the *Chesapeake*, of 38 guns, the flag-ship of the squadron sent against Tripoli, serving with distinction in that brief war. In 1806, he was made capt., and in the war of 1812 had command on the great lakes. In 1813, he participated in the capture of York, now Toronto, and of fort George, driving the enemy from the whole of Niagara region. On one occasion he captured five British vessels, and a regiment of troops. In Aug., 1814, he blockaded a British fleet in Kingston harbor until the close of navigation. Before the lake opened again, peace was concluded. In later years he was in command of the navy-yard at Brooklyn, and of the squadron that conveyed an officer to make the treaty of peace with Algiers. At the time of his death he was president of the board of navy commissioners.

CHAUNCY, CHARLES, 1705-87; great-grandson of the president of Harvard, a graduate of that institution, and pastor of the First church in Boston in 1727. He published many works, among which were *Complete View of the Episcopacy*; *Seasonable Thoughts on the State of Religion in New England*; *Mystery Hid from Ages, or the Salvation of all Men*; and *The Benevolence of the Deity*. He officiated 60 years in one parish.

CHAUNCY, or CHAUNCEY, CHARLES, 1592-1672; a native of England, educated at Cambridge, where he became professor first of Greek and afterwards of Hebrew. His puritanism involved him in difficulties with the ecclesiastical authorities, and he was fined and imprisoned. In 1638, he emigrated to New England, and was for three years pastor at Plymouth, Mass., and afterwards at Scituate. There having been a change in ecclesiastical policy in England, he was about to return to his vicarage in Ware, when Henry Dunster, the first president of Harvard college, resigned, and the place was offered to Chauncey. He at once accepted (1654), and remained in office all his life. He left six sons, all of whom graduated at Harvard, and all became preachers.

CHAUTAUQUA, a co. in w. N. Y., having lake Erie on the n. and Pennsylvania on the s. and w.; drained by Conewango creek, and traversed by the Erie, the Lake Shore, the Atlantic and Great Western, and other railroads; 1000 sq.m.; pop. '75, 64,781. Among mineral productions are iron and marble; also there are sulphur springs, and natural gas, which has been successfully used in lighting houses. The surface is mostly level, and the soil fertile, producing wheat, oats, corn, barley, potatoes, hay, cheese, butter, wool, and maple sugar. Co. seat, Mayville.

CHAUTAUQUA LAKE, in Chautauqua co., N. Y., 730 ft. above the level of lake Erie and 1290 ft. above the ocean. It is 18 m. long and 1 to 3 wide, with a navigable outlet to Alleghany river.

CHAUVEAU, PIERRE J. O., b. Quebec, 1820. In 1844, he was chosen to the provincial legislature, became solicitor-general in 1851, and provincial secretary in 1853. In 1855, he was appointed superintendent of education for Lower Canada. On the organization of the confederation, he became first minister of the government of Quebec, and in 1873 was chosen speaker of the Canadian senate. He is the author of *Charles Guérin*, the first Canadian-French novel ever published.

CHAUVENET, WILLIAM, LL.D., 1819-70; b. Penn.; a graduate of Yale; and long connected with Alexander D. Bache in magnetic and meteorological observations at Girard college. In 1841, he was appointed professor of mathematics in the navy, and assisted in the establishment of the naval academy at Annapolis and of its observatory, of which he was made director. He was for a time professor of mathematics and astronomy in Washington university at St. Louis, Mo. Among his works are *Manual of Spherical and Practical Astronomy*; *The Binomial Theorem of Exponents and of Logarithms*; and *Plane and Spherical Trigonometry*.

CHAUVIN, ETIENNE, 1640-1725; a minister of the reformed religion, b. at Nîmes. At the revocation of the edict of Nantes, he went to Rotterdam, and in 1695, he was made professor of philosophy at Berlin. His principal work is a *Lexicon Rationale, sive The-saurus Philosophicus*. He also wrote *Theses de Cognitione Dei*, and started the *Nouveau Journal des Savants*.

CHAVES, a t. in Portugal, near the frontier, on a plain near the right branch of the Tamega, which is here crossed by an old Roman bridge of 18 arches; pop. 4,870, but formerly as many as 20,000. Its hot saline springs were known to the ancients. In one of its churches is the tomb of Alphonso I.

CHAZELLES, JEAN MATHIEU DE, 1657-1710; a mathematician and engineer; b. at Lyons. He was for some time employed by Cassini in measuring an arc of the meridian, and finally became hydrographic professor for the galleys at Marseilles. In 1689, he set sail from Rochefort with 15 galleys, cruised as far as Torbay, in England, and

took part in the descent upon Teignmouth. C. published many maps and charts in the *Neptune Français*, and traveled to Egypt, where he measured the pyramids. He was made a member of the academy in 1695.

CHAZY, a village and township in Clinton co., N. Y., on the w. shore of lake Champlain; the village on the Plattsburg and Montreal railroad; pop. of town, '75, 3,068. One of the mineral products of the township is the C. limestone, of the lower Silurian formation.

CHEATHAM, a co. in n.w. Tennessee, on Cumberland river; 350 sq.m.; pop. '70, 6,678—1470 colored. Chief productions, corn, oats, and tobacco. Co. seat, Ashland City.

CHEATING (*ante*), defined in American law as "deceitful practices in defrauding or endeavoring to defraud another of his known right, by some willful device contrary to the plain rules of common honesty." Bouvier says: "In order to constitute a cheat or indictable fraud, there must be a prejudice received, or such injury must affect the public welfare, or have a tendency to do so." Courts have held that it is not indictable for a person to obtain goods by false verbal representations of his credit in society, and of his ability to pay for them; or to violate his contract, however fraudulently it may be broken; or fraudulently to deliver a less quantity than was contracted for and represented. To cheat one of his money or goods by false weights or measures has always been an indictable offense. The word "cheat" is not actionable unless spoken of a plaintiff in relation to his profession or business.

CHEAT RIVER, a stream in West Virginia, formed by brooks rising in the Alleghany mountains, flowing through a region rich in iron and coal, and joining the Monongahela in Fayette co. It furnishes abundant water-power, and is in some parts navigable for steam-boats.

CHEBOYGAN, a co. in n. Michigan, forming, with Emmett co., the extreme northern portion of the peninsula; 500 sq.m.; pop. '70, 2,196. It contains a number of small lakes. Agriculture is the main business. Co. seat, Duncan.

CHECKERBERRY. See GAULTHERIA, *ante*.

CHECKERS. See DRAUGHTS, *ante*.

CHÉDOTEL, the pilot of the expedition sent from France in 1598 to the coasts of Nova Scotia, under command of the marquis de la Roche. Arriving at Au Sable island (90 m. s.e. of Nova Scotia, an uninhabited island 25 m. long by 1 to 1½ wide), 50 men were landed, and the ships departed for the mainland. But weather prevented a landing at the island on returning, and the men were left there seven years. In 1605, they were sent for, and 12 only were found alive.

CHEESE (*ante*), manufactured in immense quantity in the eastern and northern United States, particularly in New York, Ohio, Illinois, Vermont, Massachusetts, Pennsylvania, Wisconsin, and Michigan. Of 163,000,000 lbs. returned as made in the census year of 1870, 101,000,000 lbs. were made in N. Y. State. Within recent years nearly all descriptions of foreign cheese are imitated in this country, and the most of the imitations are equal to the imported article. Many farmers have ceased to manufacture C. in their own dairies. The milk is taken to large factories, where it is weighed and emptied into a common receptacle. The processes following are directed by trained superintendents, and the average product is greatly improved. The farmers receive either payment for the milk as brought, or a share in the proceeds of the manufacture.

CHEESHAHTEAUMUCK, CALEB, an Indian, b. 1646; the only aboriginal graduate of Harvard college.

CHEEVER, EZEKIEL, 1615–1708; b. in England; came to New England in 1637, and assisted in founding New Haven colony, in which he became prominent as a deacon, a minister, and especially as a teacher. He also taught in Ipswich, Charlestown, and Boston, being at the head of the famous Latin school in Boston for 38 years. He prepared the *Accidence, a short Introduction to the Latin Tongue*, and wrote *Scripture Prophecies Explained, in three short Essays*.

CHEEVER, GEORGE BARRELL, D.D., b. Me., 1807; a graduate of Bowdoin college and Andover theological seminary, and in 1832 ordained pastor of a Congregational church in Salem, Mass. He began at an early age to write for the press, contributing prose and verse to the current magazines and quarterlies. The Unitarian controversy attracted his attention, and he wrote a defense of the orthodox system of Cudworth. Temperance also became a leading idea, and in 1835 he published in a Salem newspaper *Deacon Giles's Distillery*, a bitterly satirical allegory which had a wonderful popularity. The author was prosecuted, and sent to prison for a month. After some time passed in European travel he took charge of the Allen street Presbyterian church in New York city, and soon afterwards gave a series of lectures on the "Pilgrim's Progress" and on "Hierarchal Despotism." After another trip across the sea he became the leading editor of the *Evangelist*, a weekly religious journal in New York, for which he had been a correspondent. In 1864, he became pastor of the Church of the Puritans (Congregational) in New York city, retaining that office until 1868, when the church, whose ground-lease had expired and which was weakened by dissensions, disbanded. His ministry

there was amid the fierce debate which preceded the war of the rebellion. Since that time he has not been in the active ministry, and has resided at Englewood, N. J. He has written many essays and books, among which are, *Studies in Poetry*; *Lectures on the Pilgrim's Progress*; *Wanderings of a Pilgrim*; *Windings of the River of the Water of Life*; *Voices of Nature*; *Powers of the World to Come*; *God against Slavery*; and *The Guilt of Slavery and Crime of Slave-holding*.

CHEEVER, HENRY THEODORE, b. Me., 1814; brother of George B.; a graduate of Bowdoin, and correspondent abroad of the *Evangelist* of New York. He was a Congregational minister in New York, New Jersey, and Connecticut, and secretary and agent of the church anti-slavery society from its beginning. He published several books of travel, memoirs, etc.

CHE-FOO, or YEN-TAI, a seaport t. of n. China, on the s. coast of the gulf of Pih-chih-ti, in the province of Shantung, 30 m. e. of Tang-chow-foo. It was a place of small consequence until, under the treaty of 1858, it was opened to foreign trade as the port of Tang-chow. There is now a custom-house, a British consulate, and a considerable foreign settlement. The imports are chiefly woolen and cotton goods, iron, and opium; the exports bean-cake, bean-oil, peas, raw silk, straw braid, dried fruit, etc. There is some trade with the Russians in Mantchuria.

CIEHA'LIS, a co. in Washington territory, on the Pacific; 1600 sq.m.; pop. '70, 401. Gray's harbor, one of the few places of refuge from the ocean, is in this county. Co. seat, Montesano.

CHEILOANGIOSCOPY, a method of observing the circulation of the blood. Heretofore, with the exception of a single experiment the evidence of circulation in the human subject has been entirely circumstantial, derived from the facts of structure of the circulatory organs, and from the manner in which the blood flows from several arteries and veins. But by means of a simple arrangement, invented by Dr. C. Hüter, a German, it is now possible for one to witness the actual flow of blood in the blood-vessels of another person, and that with sufficient accuracy to detect any abnormality in the circulation, and so to obtain invaluable assistance in the diagnosis of disease. In Dr Hüter's arrangement the patient's head is fixed in a frame, something like that used by photographers, on which is a contrivance for supporting a microscope and lamp. The lower lip is drawn out, and fixed, by means of clips, on the stage of the microscope, with its inner surface upward; a strong light is thrown on this surface by a condenser, and the microscope, provided with a low-power objective, is brought to bear upon the delicate net-work of vessels, which can be seen in the position indicated, even with the naked eye. The appearance presented is, at first, as if the vessels were filled with red injection. But by focussing a small superficial vessel, the observer is soon able to distinguish the movement of the blood-stream, rendered evident by the speck-like red corpuscles, the flow of which, in the corkscrew-like capillaries, is said by Hüter to be especially beautiful. The colorless corpuscles are distinguishable as minute white specks, occurring now and again in the course of the red stream. Beside the phenomena of the circulation, the cells of pavement-epithelium lining the lip, and their nuclei, can readily be distinguished, as well as the apertures of the mucous glands. Beside the normal circulation, various pathological conditions can be observed. By a pressure quite insufficient to cause pain, the phenomena of blood stagnation—the stoppage of the flow, and the gradual change in the color of the blood from bright red to purple—are seen. A momentary stoppage is also produced by touching the lip with ice, a more enduring stasis by certain reagents, such as glycerine or ammonia.

CHELMSFORD, FREDERICK THIESIGER, Baron, b. London, 1794; a lawyer and judge; solicitor-general in 1844; and next year attorney-general, and again in the same office in 1852. In 1858, he was made lord chancellor, and received the title of lord C. He filled the same office in 1866.

CHELSEA, a city in Suffolk co., Mass.; pop. '70, 18,547; a suburb of Boston, with which it is connected by ferry, and horse and steam railroads. C. is separated from East Boston by C. creek, and from Charlestown by Mystic river, which is crossed by a bridge 3,300 ft. long. The principal public buildings, besides churches, are the city hall, the U. S. naval hospital, the marine hospital, odd fellows' and masonic halls, and Winnisimmet hall. C. is in the Boston customs district, and there are some manufactories in the city; but the business of many of the inhabitants is in Boston. It has the usual civic government of mayor, aldermen, and common council; with police, fire, and water departments, board of education, etc. C. was settled in 1630 under the name of Winnisimmet, and was a part of Boston until 1738, when, with adjacent settlements, it was organized as the town of C. It was incorporated as a city in 1857.

CHEMOSH, the national deity of the Moabites and the Amorites. Solomon introduced the worship of C. into Jerusalem, but Josiah put a stop to it. Scholars are not agreed as to descriptions either of the deity or the worship. Jerome identifies C. with Baal-Peor; others with Baal-Zebub; Genesis with Mars, or some god of war; some with Saturn, as the star of ill-omen; C. having, according to Jewish legend, been worshiped in the form of a black stone; and Maimonides says his worshipers went bareheaded, and

used no garments sewn by the needle. Hackmann makes the name equivalent to "royal deity," and, apparently, children were sacrificed to him.

CHEMUNG', a co. in s. New York, on the Pennsylvania border, intersected by Tioga river, and traversed by the New York and Erie and the Northern Central railroads, and the canal from Seneca lake to Elmira; 513 sq.m.; pop. '75, 41,769. The surface is partly level and partly hilly; soil fertile. The chief productions are wheat, corn, oats, buckwheat, potatoes, hay, butter, wool, honey, and tobacco. There are in the county several carriage and wagon manufactories, flour-mills, saw-mills, tanneries, etc. Co. seat, Elmira.

CHENAN'GO, a co. in s. New York, on a branch of the Susquehanna, and the Chenango and Unadilla rivers, intersected by the Chenango canal, and the Albany and Susquehanna, the New York Midland, and a branch of the Delaware and Lackawanna railroads; 624 sq.m.; pop. '75, 39,879. It has an elevated, hilly, and broken surface, with fruitful soil, producing corn, wheat, oats, potatoes, hay, cheese, butter, wool, maple sugar, and hops. There are in the county more than 40 cheese factories, and several flour-mills, tanneries, furniture and carriage manufactories. Co. seat, Norwich.

CHENAN'GO RIVER, a stream in central New York, rising in Oneida co., and flowing, with a length of about 90 m., through Madison and Chenango counties to the Susquehanna, near the Pennsylvania boundary.

CHENDAREE, or CHUNDEREE. See CHANDHAIREE, *ante*.

CHENEY, CHARLES EDWARD, D.D., b. 1836; a graduate of Hobart college and a student in the Virginia theological seminary (Episcopal). He had pastoral charge in Rochester and Havana, N. Y., and in Chicago, Ill. In Dec., 1873, having left the Protestant Episcopal church, he was chosen assistant bishop, and afterwards bishop, of the Reformed Episcopal church, then newly organized. He is a vigorous thinker and an able organizer; he is still rector of Christ church, Chicago.

CHÉNIER, ANDRÉ-MARIE DE, 1762-94; a French poet, b. in Constantinople. He undertook military life, but resigned his commission after six months' trial, and returned to Paris, where he wrote idyllic poems, such as *Le Mendicant*; *L'Aveugle*; and *Le Jeune Malade*. Overwork made a journey for health necessary, and he traveled in Switzerland, Italy, and the Grecian islands. Returning to Paris in 1786, he recommenced study and work, and produced the *Elegies*; *Art d'Aimer*; *L'Invention*; *Hermes*; *Susanne*, and *La Liberté*. From 1787 to 1790, he resided in London as a secretary to the French embassy, but neither the position nor the people were congenial, and he returned to France, plunging at once into the revolution, then well under way, taking the moderate side. In 1791, he was defeated as a candidate for a seat in the national assembly, and the next year an invective against the Jacobins involved him in a quarrel with his brother Joseph, whom he was afterwards to defend against the attack of Burke. When the hopes of the monarchy were gone, he returned to literature, but the trial of the king brought him once more forward, and he took part in preparing the defense, and also drew up an appeal to the people. He was broken in health and spirits; Paris was dangerous; and he went to Versailles, where he wrote poems to "Fanny." At Passy, Jan. 6, 1794, he opposed the arrest of a lady in whose house he was living, an act which resulted in his own seizure and incarceration in St. Lazare. Here he wrote *La Jeune Captive* for the duchess of Fleury, and for the convention the furious iambs so often quoted. At the tribunal he appeared with 44 others, and 38, including himself, were condemned to execution. The next day, July 25, 1794, he, with the counts de Montalembert and de Crequi, was led to death. As he descended the steps of the conciergerie, he said to Roucher, "Je n'ai rien fait pour la postérité. Pourtant" (striking his forehead), "j'avais quelque chose là." Three days later, in the same place, Robespierre and his fellows were executed, and the "reign of terror" was at an end. C.'s poems, with the exception of two, remained unedited for a quarter of a century.

CHÉNIER, MARIE JOSEPH DE, 1764-1811; poet and dramatist, younger brother of André Chénier; b. in Constantinople, and educated at the college de Navarre. He also served a short time in the army, but left it for literary composition, producing, at the age of 20, *Azemire*, a tragedy which was not very successful. His next work, however, *Charles XII.*, gave occasion for the commencement of Talma's renown, and gained great popularity. It still keeps the stage. Following these came *Henry VIII.* and *Calas*; in 1792, *Caius Gracchus*, which was proscribed and burned because of the anti-anarchical phrase "The law, and not blood;" and the drama *Timoleon*, proscribed in 1793. The death of his brother on the scaffold took him away from play-writing, which he attempted again only once (in 1804), when he produced *Cyrus*, which was not a success. He was long a prominent member of the Jacobin club; a member of the convention, and also of the council of five hundred, over both of which he presided; he had a seat in the tribunate, and belonged to the committees of public instruction, of general security, and of public safety. In 1806-7, he delivered a course of lectures, on the language and literature of France from the earliest period; and in 1808, at Napoleon's request, he prepared his *Tableau Historique de l'Etat et du Progres de la Littérature Française*. He was the author of many hymns, songs, and odes, among them the famous *Chant du Départ*; odes on the death of Mirabeau, the oligarchy of Robespierre, etc.; tragedies

that never reached the stage, and translations from the Greek, Latin, and German authors. As a satirist he was said to possess great merit.

CHENONCEAUX, CASTLE OF. See BLÉRÉ, *ante*.

CHEOPS, according to Herodotus, an Egyptian king, called Chombes by Diodorus, Souphis by Manetho, Saophis by Eratosthenes, and in Egyptian "Khufu." He was the second king of the fourth dynasty of Manetho, and the builder of the great pyramid at Ghizeh. His name was supposed to mean "wealthy," or "having much hair." He spent enormous sums on the pyramid (see PYRAMID, *ante*), and one improbable story is that he was compelled through want of money to sacrifice the honor of his daughter to insure its completion. He is also depicted as impious towards the gods, closing the temples, and stopping the worship; but subsequently repenting, and writing a sacred book much esteemed by the Egyptians. The monumental information about C. does not confirm the Greek historians; on the contrary, it records the construction of temples in honor of the gods, the repair of the shrine, and the gift of various figures to the temple of Isis and Athor, close to his own pyramid, and his construction or repair of the temple of the same goddess Athor, the Egyptian Venus, at Denderah, or Tentyris. C. carried on war at the valley Magarah, in the peninsula of Sinai in Arabia; and a rock tablet represents him as having conquered the hostile tribes in the presence of the god Thoth, who had revealed to him the mines of the locality. His oppression had so afflicted Egypt, that charges of impiety had attached to his name; but the tombs of his children reveal no change in the established religion, and his pyramid differs from those of his predecessors and immediate successor only by its larger size and greater beauty. The date of C., according to Lepsius, is 3,095 to 3,032 B.C.; but great difference of opinion, amounting to nearly 2,000 years, exists as to the time of Menes, from whom the lists separate him by an interval of 898 years.

CHEPHREN, in the hieroglyphs "Khafra," called also Cephren, Chabrias, Souphis II., and Saophis II.; according to the legends, the son or brother of the Egyptian king Cheops. He built the second of the great pyramids at Ghizeh, near the sphynx and the great pyramid, and was said to have been tyrannical and hated, like his brother, so that his mummy was not buried in the sepulcher, but torn to pieces, and the sarcophagus emptied of its contents; but there is no more reason for believing in his impiety than in that of Cheops. His wife was a priestess of the god Thoth, and another prince of the family was a priest at Hermopolis. He also built the small temple behind the sphynx. It is probable that he lived 95 years, and his reign, according to Lepsius, was 3,032 to 2,966 B.C. A statue of him is in the Boulaq museum.

CHEQUE. See CHECK, *ante*.

CHERBULIEZ, ANTOINE ÉLISÉE, 1797-1869; a native of Switzerland, professor of political economy in Geneva and in the national polytechnic school in Zurich. He was a contributor to cyclopædias and periodicals, and author of *L'Utilitaire*, and *Preces de la Science économique*.

CHERBULIEZ, VICTOR, b. 1832; a Swiss author, the son of a Hebrew professor in Geneva. He has written many novels for the *Revue des Deux Mondes* (Paris), among them *Le Comte Kostia*; *Le Prince Vitale*; *Paule Mere*; *Le Roman d'une honnête Femme*; and *Le Idee de Jean Teletrol*.

CHEROKEE, a co. in n.e. Alabama, on the Georgia border, on the Coosa and Chattooga rivers, reached by the Selma, Rome, and Dalton railroad; 250 sq.m.; pop. '70, 11,132-1480 colored. The surface is mountainous, and in large part covered with forests of pine and oak. Productions mainly agricultural. Co. seat, Centre.

CHEROKEE, a co. in n.w. Georgia, on the Etowah river, which is navigable by steamboats; 620 sq.m.; pop. '70, 10,399-1281 colored. It has a rolling surface and fertile soil, yielding the usual agricultural crops. Co. seat, Canton.

CHEROKEE, a co. in n.w. Iowa, on Little Sioux and Maple rivers, traversed by the Dubuque and Sioux City railroad; 600 sq.m.; pop. '70, 1967. Agriculture is the chief business. Co. seat, Cherokee.

CHEROKEE, a co. in s.e. Kansas, bordering on Missouri and the Indian territory; 604 sq.m.; pop. '70, 11,038. It is an agricultural region, and is intersected by the Missouri, Fort Scott, and Gulf railroad. Co. seat, Columbus.

CHEROKEE, a co. in s.w. North Carolina, the extreme point of the state, adjoining Georgia and Tennessee; 650 sq.m.; pop. '70, 8,080. It has a mountainous forest-covered surface, and is little cultivated. Co. seat, Murphy.

CHEROKEE, a co. in e. Texas, between the Angelina and the Neches rivers, intersected by the International and Great Northern railroad; 1144 sq.m.; pop. '70, 11,079-3,283 colored. It is in an excellent agricultural region, consisting of alternating woodland and prairie. Co. seat, Rusk.

CHEROKEES, in their own tongue called Tsanaghee, a tribe of Indians of the United States, now settled in the Indian territory, where they occupy 5,960 sq.m. in the n.e., and 8,500 along the n. side. Their original home was in the country now forming portions of Florida, Georgia, Alabama, Mississippi, and Tennessee. They were then in

two great divisions, the Ottare, or Otari, dwelling in the mountainous districts, and the Airate, or Erati, occupying the lower lands; and they were further divided into seven clans, each of which prohibited intermarriage between its own members. They adhered to the English in early colonial times, formally recognized the king in 1730, and in 1755 ceded territory and permitted the establishment of English forts. The tribe was considerably advanced in civilization when the war of the revolution began. They clung to the royalist side, and in consequence their country was laid waste by American forces. They were subjugated after a few years of intermittent war, during which they lost much territory, and, by the treaty of Hopewell, Nov. 28, 1785, they acknowledged the sovereignty of the United States, and were confirmed in the possession of their hunting grounds. Then began the ever-recurring story of white man's encroachment and red man's resistance, with the ultimate advantage on the side of the intruders. By treaties in 1791 and 1798, portions of their territory were surrendered, and many of their people emigrated beyond the Mississippi. In 1817, the C. on the Arkansas numbered 3,000. Those who remained in their old territory abandoned hunting, and the greater portion of them lived by agriculture. But the white men of Georgia, who coveted their lands, demanded the removal of the remaining C. notwithstanding the great services which they had rendered (1812-15) in the war with England; and though the Indians were entirely peaceable, generally industrious, and were fast becoming Christianized by the efforts of Moravian missionaries and those of the American board, the clamor for their removal prevailed, and in July, 1817, they were forced to exchange their eastern lands for territory w. of the Mississippi. The end was not effected, however, without much trouble and bloodshed. Georgia passed laws extending over the territory of the C., by which the Indians were practically outlawed, deprived of citizenship, and prohibited from being witnesses. They appealed to the U. S. supreme court, and that body—which long afterward decided that a negro had no rights that a white man was bound to respect—refused the Indians the right to bring an action; and finally the general government confessed its inability to fulfill its own treaty obligations. But this inability did not prevent the federal government (in 1835) from making a treaty with a small portion of the tribe for the removal of the whole of them, and three years later an armed force was sent into their country to compel the removal. At that time the whole number of Indians in their old homes was about 27,000. The Indians were themselves divided; one section, led by John Ross, at first opposed, but at last directed the removal. Within a few years, after much difficulty and not a few murders, their removal was effected. Since their occupation of a share of the Indian territory, the C. have greatly advanced in learning and in material prosperity. About 1821, a member of the tribe invented an alphabet, and books and newspapers have been printed in their own language for half a century. In the war of the rebellion, they at first favored the confederates, but the majority soon came over to the union side. Between the two armies, their territory suffered severely, and they were compelled to emancipate their slaves. The territory of the C. now amounts to about 5,000,000 acres, and they have, in the keeping of the United States, school and orphan funds to the amount of about \$1,600,000. They are governed by a national committee and council elected for two years, and a chief who is chosen for four years. In 1873, the C. numbered 17,217, and they had 63 schools with 1,884 pupils. They live in well-built villages, and are peaceable and industrious. Tahlequah is their chief town.

CHERRY VALLEY, a village in Otsego co., N. Y., 68 m. w. of Albany, reached by way of the Albany and Susquehanna railroad; pop. of township, '75, 2,240. The village was the scene of a massacre of Americans, Oct. 11, 1778, by Indians and Tories under direction of British officers; 16 soldiers of the revolutionary army and 32 inhabitants, nearly all women and children, were killed, and all others carried into captivity. Every house in the settlement was burned.

CHER'SIPHON, an architect of Crete, who, with his son Metagenes, built or began to build the great temple of Artemis at Ephesus, commenced about 300 B.C. The columns were erected about 40 years later. It was completed 220 years after its commencement, and a few years afterwards was destroyed by fire on the night in which Alexander the great was born. This temple was considered to be one of the seven wonders of the world.

CHESEBRO', CAROLINE, 1825-73; a native of New York, author of a number of works of fiction, mostly of a moral or religious nature; among them, *Dreamland by Daylight*; *The Little Cross-bearers*; *The Fisherman's Daughter*; *The Beautiful Gate*; and *The Fox in the Household*. She was for many years a teacher in the Packer institute, in Brooklyn, N. Y.

CHESHIRE, a co. in s.w. New Hampshire, bordering on Vermont and Massachusetts, bounded on the w. by the Connecticut and drained by the Ashuelot river, and traversed by the Ashuelot and Cheshire railroad; 770 sq. m.; pop. '70, 27,365. It has a hilly surface, with some mountains, the highest being Grand Monadnock. There are several small lakes and ponds in the county. The soil is fertile, particularly along the rivers. The chief productions are grain, potatoes, hay, wool, butter, cheese, and maple sugar; and there are also many manufactories. Co. seat, Keene.

CHESNE, ANDRÉ DU. See DUCHESNE, *ante*.

CHESNEY, CHARLES CORNWALLIS, 1826-76; a brevet-col. in the British royal engineers, who first attracted attention by *A Military View of Recent Campaigns in Virginia and Maryland*, published in 1863, which was followed two years later by *Campaigns in Virginia and Maryland*, both having reference to the war of the rebellion in the United States. The work from which he received the greatest fame at home was *Waterloo Lectures*. He published, also, *The Military Resources of Prussia and France; Recent Changes in the Art of War*; and *Essays in Modern Military Biography*.

CHESNEY, FRANCIS RAWDON, 1789-1872, a British soldier who projected and led the Euphrates expedition by an overland route to India in 1835-6. He was a brig.gen. in China in 1843, maj.gen. in 1855, and gen. in 1868. He wrote *Expedition for the Survey of Euphrates and Tigris; Observations on the Past and Present States of Fire-arms; Russo-Turkish Campaigns of 1828-29*; and *Narrative of the Euphrates Expedition*.

CHIESS, or CHEAT, common names of the *bromus secalinus*, a plant of the order *graminaceæ*; a troublesome weed that frequently springs up in wheat-fields, the seed mixing with the true wheat, from which it can be separated only with difficulty. It was once generally believed among farmers that wheat itself was transmuted into chess.

CHIESTER, a co. in s.e. Pennsylvania, on the Delaware and Maryland borders, traversed by the Pennsylvania Central, Philadelphia and Baltimore, Philadelphia and Reading, and other railroads; 738 sq.m.; pop. '70, 77,805. The soil is rich and is thoroughly cultivated, producing wheat, corn, oats, potatoes, hay, butter, wool, etc. There are deposits of chromate of iron, gneiss, porcelain clay, sandstone, copper, lead, iron, and occasionally zinc, agate, amethyst, silver, titanium, zircon, sapphire, and beryl are found. The historical Valley Forge is in the co., which also contains the birthplace of Anthony Wayne. Co. seat. West Chester.

CHESTER, a co. in n. South Carolina, between the Catawba and Broad rivers, traversed by the Charlotte, Columbia and Augusta, and the King's Mountain railroads. The surface is uneven, soil fertile; business mainly agricultural. Co. seat, Chesterville.

CHESTER, a city in Delaware co., Penn., on the Delaware river and the Philadelphia and Wilmington railroad; 10 m. s.w. of Philadelphia; pop. '70, 9,485. C. is the oldest town in the state, having been settled by Swedes in 1643. William Penn's provincial assembly was held in Chester, and it was the co. seat of Chester co. until Delaware co. was set off in 1789.

CHESTERFIELD, a co. in n.e. South Carolina, intersected by the Cheraw and Darlington railroad; 868 sq.m.; pop. '70, 10,584-4,309 colored. Productions chiefly agricultural. Co. seat, Chesterfield Court House.

CHESTERFIELD, a co. in s.e. Virginia, between the Appomattox and the James river, traversed by the Richmond and Petersburg, and the Richmond, Danville, and Piedmont railroads; 300 sq.m.; pop. '70, 18,470-8,733 colored. Coal is abundant, but agriculture is the chief business, and corn and tobacco are the principal crops. Co. seat, Chesterfield Court House.

CHESUN'COOK LAKE, an expansion of Penobscot river in Piscataquis co., Me., about 24 m. long by 2 to 4 m. wide.

CHEVERUS, JEAN LOUIS ANNE MADELEINE LEFEBVRE DE, D.D., 1768-1836; the first Roman Catholic bishop in New England. He was raised to the priesthood in 1790, and had a curacy at Mayence, in France; but on refusing to take the oath required by the assembly he went to England, and in 1795 came to America and joined the Roman Catholic mission in Boston. He spent some months in Maine as an Indian missionary. During the prevalence of the yellow fever in Boston his faithful and efficient service, without regard to sect or belief, made him remarkably popular, and when he started a subscription for funds to build a church of his faith, John Adams, then president of the United States, headed the list. In 1808, he was made bishop against his own protest. In 1823, he was recalled to France, and made bishop of Montauban, and still later bishop of Bordeaux and peer of France. He was appointed a cardinal Feb. 1, 1836. Six months afterward he died suddenly from apoplexy.

CHEVES, LANGDON, LL.D., 1776-1857; a native of South Carolina; elected to the state assembly in 1808; and to congress in 1816, serving five years, for a part of the time being speaker of the house, in which position he gave the casting vote that defeated the rechartering of the U. S. bank; but in 1819 he became president of the same bank. He was chief commissioner in settling some of the provisions of the treaty of Ghent. In 1850, he was a delegate to the Nashville national convention, and in 1852, a member of the South Carolina state convention, in which he opposed a separate state secession.

CHEVREUSE, MARIE DE ROHAN MONTBAZON, Duchesse de, 1600-79; a native of France, married first to the duc de Luynes, and next to Claude de Lorraine, duc de Chevreuse. Her friendship for Anne of Austria made Richelieu her enemy, and he resolved to have her arrested; but, learning of his purpose, she dressed in male attire, swam across the Somme, and escaped to England. She was concerned in other political intrigues, and was kept in banishment nearly all her life.

CHEWINK, the popular name for the ground robin, or towhee bunting, *pipilo erythrophthalma*. It is of variegated colors, red, white, and brown, is about 7 or 8 in. long, nests on the ground, and flies with a peculiar jerky motion. It lives in thickets, and finds its sustenance in seeds and worms scratched up from leaves and grasses.

CHEYENNE, a co. in s.w. Nebraska, on the Colorado and Wyoming border, intersected by the n. and s. forks of the Platte; 6,000 sq.m.; pop. '70, 190. The Union Pacific railroad passes through the s. part. Co. seat, Sidney.

CHEYENNE, a city in Laramie co., Wyoming, the capital of the territory, on the Union Pacific railroad, where it is joined by the Denver Pacific, 516 m. w. of Omaha and 1400 m. e. of San Francisco; pop. about 5,000. The town is on a broad open plain, 6,000 ft. above tide, and the streets are wide and regular. It is connected by rail with Denver, 106 m. s. of Colorado. The main business is in receiving and distributing supplies for Indian agencies and government forts. There are, however, several manufacturing, and a rapidly growing general business. The place was first settled in 1867, when the Union Pacific railroad reached that point. In 1869, a large portion of the city was destroyed by fire.

CHEYENNES, an Indian tribe of the Algonquin family, once residing on and near the Cheyenne river, a tributary of the Red river of the North. Driven away by the Sioux, they retired beyond the Missouri, and about the beginning of the century they were further driven to the Black Hills region. In 1825, the first treaty with them was made by gen. Atkinson. Since then many treaties have been made, and almost all of them immediately broken by the whites, and constant trouble has been the result. The fearful and cold-blooded massacre of nearly a hundred men, women, and children of this tribe, by col. Chivington, of Colorado, in Nov., 1864, led to war that cost the U. S. government \$40,000,000, and so embittered the Indians that a permanent peace can hardly be looked for. In 1867, gen. Hancock burned some of the villages, and began or rather continued a state of war, in the course of which gen. Custer defeated them at Washita, where Black Kettle, a chief, and two or three dozen squaws and pap-pooes were killed. The revenge taken upon Custer a few years later will not soon be forgotten. Almost while this article is being written, the government is in danger of another general Indian war, growing out of unfair dealing on its own part with the Cheyennes and other Indians with whom it has entered into solemn contracts.

CHHATISGARH, a division of British India under the jurisdiction of the commissioner of the central provinces, comprising the districts of Raipur, Bilaspur, and Sambalpur, and seven small feudatory states, between 16° 50' and 23° 10' n., and 80° 30' and 83° 15' e.; 36,467 sq.m.; pop. '72, 3,289,043, of whom 2,054,874 were Hindus, 26,046 Mohammedans, 243 Buddhists, 451 Christians, and 1,207,429 aboriginal tribes of religion not specified. Two large rivers, the Nerbuddha and the Son, rise in the n.e. corner of the division, the former running nearly w. to the Bombay coast, and then falling into the Ganges in lower Bengal.

CHHINDWARA. See CHINDWARA, *ante*.

CHICAGO (*ante*). In 1831, when the first white settlement was made at the mouth of the Chicago river, it seemed an unpromising site for a great city, and for years afterwards there probably was not among its inhabitants one who expected that such a city would grow up on that spot. The river mouth was a sluggish bayou; its banks marshy, muddy flats, suggestive of intermittent and congestive fevers. But harbors on the great lakes were not turned out ready made by nature, but had to be constructed to a greater or less extent by human enterprise and skill, and that of Chicago was no exception to the general rule. There was need of a good harbor at that point, and the location was not unfavorable, if the citizens and the government could be persuaded to spend money enough in the effort. The channel could be dredged, the flats filled, and the waves of the lake beaten back by artificial structures of wood or stone. This work, begun upon a small scale, has been rapidly extended to meet the growing wants of commerce, until C. now has a harbor adequate to the demands of a great city. The shore of the lake at this point presents an even line, extending very nearly due north and south. The river extends back from the lake westerly five eighths of a mile, at which point two branches come in, one from the northward, the other from the southward; thus dividing the city into three parts, known as the n., s., and w. divisions. The s. branch of the river is connected by the Illinois and Michigan canal with the Illinois river at La Salle, thus opening a direct water communication with the Mississippi. In the earlier period of its history, C. suffered much from intermittent and bilious fevers, cholera and other diseases, consequent upon its low, marshy situation; but at length the grade of a large portion of the city was raised from 8 to 10 ft.; block after block of heavy buildings, including some of the largest hotels and stores, being raised to the required level by jack-screws, worked by steam-power. It was one of the most stupendous engineering experiments ever undertaken, but it was successfully accomplished. The Illinois and Michigan canal was completed, 1848. It is 96 m. in length, and at its highest level was originally 12 ft. above the lake; but in 1866-70 the city deepened it at a cost of \$3,251,621. It is now 8½ ft. below the ordinary level of the lake. The river channel was also deepened, so that the lake no longer receives its waters, but itself furnishes a clear

stream flowing the other way, giving improved navigation and carrying off the sewerage of the city towards the Illinois river at the rate of a mile an hour. The fruits of this engineering enterprise are seen in the suppression of the foul odors so long endured by the inhabitants, and the consequent improvement in the sanitary condition of the city. The harbor at the mouth of the river is protected by magnificent lines of breakwater, so arranged as to afford space for extensive ship channels and docks. One of the basins thus provided comprises an area of nearly 300 acres, the entrance to which from the lake is 600 ft. wide. The city extends along the lake side about 8 m., and westward 5 m., embracing an area of about 35 sq. miles. Its grade is 14 ft. above the lake on the eastern side, and 28 ft. at the western extremity. The descent towards the lake from the w. is sufficient for drainage. The city is regularly laid out, the principal avenues running parallel with the lake shore. The streets are generally 80 ft. wide, and some of them are from 3 to 7 m. in length. The scarcity of stone has led to the use of wood, cinders, and gravel for pavements. The streets are lighted with gas, and amply supplied with sewers. The n., s., and w. divisions are connected by numerous bridges across the river and its branches, and by two stone tunnels under the river-bed, of which, one passes under the s. branch, connecting the s. and w. divisions; the other, under the main river, connecting the n. and s. divisions. These tunnels cost nearly \$1,000,000. Horse cars traverse the city in every direction. The business portion of the city is mainly in the s. division, and here also are the chief public buildings, hotels, retail stores, etc. The most important public buildings are the U. S. custom-house and post-office, occupying an entire block 342 by 210 ft., and costing upwards of \$5,000,000; the chamber of commerce, a spacious and imposing structure, with elaborate interior decorations; the new city hall and county court-house, occupying a whole block and costing \$5,000,000; and the exposition building, a vast edifice of iron and glass, 800 ft. long and 200 ft. wide, and surmounted by a dome 60 ft. in diameter and 160 ft. in height. Some of the 300 churches of the city are fine specimens of various styles of ecclesiastical architecture. C. has 6 public parks, with an aggregate area of nearly 2,000 acres, connected by boulevards 250 ft. wide, extending around the three sides of the city, with a drive on the lake shore. These afford a continuous driveway of more than 30 miles. Lincoln park, in the n. division, contains 230 acres fronting upon the lake. A boulevard on the n., $3\frac{1}{2}$ m. long, connects this with Humboldt park on the w.; while that by another boulevard is in turn connected with Central park, and that again by still another with Douglas park. From the latter a boulevard runs a distance of 9 m. to a park in the s. division. From the s. end of the northern park a broad avenue extends eastward to another fronting upon the lake. The parks of the s. division are just outside of the city limits.

The water communications of C. are of vast extent, embracing the whole chain of northern lakes, with their 3,000 m. of coast-line. Steamboats and sailing vessels of the largest class are employed in commerce with lake Superior, bringing down vast stores of iron and copper ore from that region; while through the Welland canal (around Niagara falls), connecting lake Erie with lake Ontario, vessels loaded at C. pass eastward to Montreal, where connection is made with steamships for Europe. The Erie canal through New York is also a commercial highway for Chicago to the ports of the Atlantic seaboard. The Illinois and Michigan canal, already mentioned, gives the city communication with the Mississippi and its affluents during nine months of every year. But, important as all these water channels are, they are not more so than the network of railroads by which C. is put in rapid communication with a vast region of country extending from the lakes of the north, eastward to New York, Philadelphia, Boston, and Portland; southward to Louisiana and Florida; and westward to the Pacific coast. There is not another such railroad center in the world. From 10,000 to 12,000 m. of railway are in a greater or less degree tributary to this great city, now about 50 years old. The different lines of road converging to the city, as represented on the map, are bewildering alike to the eye and to the imagination. Nearly 400 trains enter and leave daily upon these roads, making an aggregate of nearly 800 arrivals and departures. The accommodations for these roads are, upon the whole, excellent. The Union depot, one of the largest and finest buildings of the kind in the country, is used by two of the principal roads; the Central depot, by two others; and there are three or four more for the use of others. Plans for uniting all the roads at a common center, or for connecting them by a common track, have been proposed.

C. is supplied with an abundance of pure water from lake Michigan by a process which is one of the wonders of modern engineering skill. Two cylindrical brick tunnels, one 6 ft., the other 7 ft. in diameter, starting from the shore at different points, extend a distance of 2 m. under the lake, and meet in an immense crib inclosing a grated cylinder, through which the water descends into them in a stream unfailling as the lake itself. The smallest of these tunnels, extending from the shore of the n. division of the city, was completed in 1866. The water as it is received at the shore end of the tunnel is forced by steam-pumps through a stone tower to a height of 160 ft. into a reservoir, whence it is distributed by pipes to different parts of the city. The top of the water-tower, which is reached by a spiral staircase, affords a fine view of the city and the surrounding country. On the crib, 2 m. out in the lake, stands a light-house, with a dwelling for the keeper. The second and larger tunnel, which supplies the south-west-

ern section of the city, was completed in 1874. A tunnel 7 ft. in diameter, passing under the central portion of the city, is to connect the old works with the new, and afford an independent supply of water for extinguishing fires. The tunnels under the lake cost \$1,507,622. The water-works altogether, to Jan. 1, 1873, are estimated to have cost more than \$5,000,000. Besides the supply from the lake, the city has another resource in some 40 artesian wells, two of which (694 and 911 ft. deep respectively) yield about 1,200,000 gallons per day. The great stock-yards, the west-side parks, and some of the manufacturing establishments, are supplied from these wells.

The educational facilities of C. are extensive, and of a high order of excellence. The public schools, which give instruction to the children of citizens with no distinction of class, are well organized and efficient. The number of these schools in 1872 was 32, occupying 45 buildings and employing 476 teachers—all but 31 women. The school pop. of the city (between 6 and 21 years of age) was 88,219; the number of pupils enrolled 38,035, of whom 512 were in the high school, and 63 in the normal school. Of the teachers, 221 were graduates of the normal and high schools. Total expenditure for these schools in 1872, \$499,349, including about \$360,000 for teachers' salaries. The school buildings with the land on which they stood were valued at over \$2,265,000. The Roman Catholics also have schools, and there are many private academies. The university of Chicago, a Baptist institution, founded by the efforts of Stephen A. Douglas, has connected with it a law school, and the Dearborn astronomical observatory, both well equipped and efficient, and a library of 20,000 volumes. St. Ignatius's college, founded in 1870, also is a flourishing institution. Of the six medical colleges of the city, one is open to women, one is homeopathic, and one eclectic. Of the four theological seminaries, one is Baptist, one Congregational, one Lutheran, and one Presbyterian. There are also three commercial colleges, and four female colleges or seminaries of high grade. The academy of sciences, established 1857, lost heavily by the great fire of 1871, but is getting a new museum and library. The public library occupies the old custom-house and post-office, whose walls outlasted the great fire: the number of volumes is estimated at 100,000. According to the latest reports, there were more than 100 newspapers and periodicals published in the city. Of these 11 were daily, 5 tri-weekly, 45 weekly, 3 semi-monthly, 1 bi-monthly, and 4 quarterly; 18 were religious, 16 political, 18 literary, 10 commercial, and 5 juvenile. Some of these papers have a very large circulation, exerting a very wide influence in the north-western states.

The principal religious denominations, according to the number of their churches, rank as follows: Roman Catholic, 27; Methodist, 22; Baptist, Presbyterian, and Episcopal, each 18; Congregational, 17; Swedenborgian, 4; Unitarian, 5; Universalist, 4. Benevolent and charitable associations and institutions are numerous. Among them are 7 orphan asylums, 6 dispensaries, 2 asylums for the aged and indigent, 1 home for the friendless, and a multitude of smaller charities. The C. relief and aid society, from its foundation, 1857, has had the management of a large portion of the voluntary charities of the city for the benefit of the poor, infirm, and helpless. The same society disbursed to the sufferers by the great fire of 1871 the sum of nearly \$6,000,000, sent for their relief from Europe and every part of the United States. The young men's Christian association was also very active at that time, as it was before and has been since, for the relief of the poor and destitute. The population of C. in 1870 was 298,977; according to the unofficial figures of the census of 1880, as reported by the *Tribune* of that city, it is 503,298. [At the date of this writing the census has not been officially issued.]

As a commercial city C. ranks next to New York. It is the center of a vast trade in breadstuffs, live-stock, pork, beef, provisions, lumber, wool, hides, groceries, dry-goods, boots and shoes, hardware, clothing, and tobacco. The statistics now accessible are very inadequate as a means of showing the present extent of the trade and manufactures of the city. Every year shows a startling augmentation of the volume of business of almost every kind in this great western emporium, itself the wonderful growth of but half a century. The aggregate wholesale trade of the city in 1872 was reported by the board of trade at \$500,000,000. The total receipts of wheat in 1873 were 16,626,923 bushels; to this add 88,426,842 bushels represented by the flour received in 1872 (less, doubtless, than was received in 1873), and we have a total of 105,053,765 bushels for a single year. The great yards which are the center of the live-stock trade were opened in 1858. They cover an area of 345 acres, affording a capacity for 21,000 cattle, 75,000 hogs, 22,000 sheep, and 200 horses. They are thoroughly drained, supplied with water from artesian wells, and furnished with every convenience for the reception, care, and transfer of the animals. The total value of live-stock received in 1872 was estimated by the board of trade at \$75,475,000. The chief branches of manufactures in C. are iron, flour, high-wines, agricultural implements, pork and meats, boots and shoes, leather, cotton, and watches. It is supposed that at the present time not less than 60,000 people are employed in manufactures of one kind or another, and that nearly one third of the commerce of the city is based upon what they produce. Ship-building also is carried on to some extent. The flour manufacture was temporarily crippled by the great fire, 6 of the 15 mills having been destroyed. The banking business of C. is very large. In 1872, there were 21 national banks, with a capital of over \$11,000,000, and more than \$23,000,000 of deposits. There were also 18 savings-banks with over \$12,000,000 of deposits, and numerous private banks. The total valuation of real and

personal property for taxation in 1872 was \$284,197,430; the actual value at the same time was more than \$620,000,000.

The great fire of Oct., 1871, raged two days and nights, destroying everything upon an area of 2,100 acres, embracing nearly all the business portion of the city, and a very large number of private residences, among which were the most costly in the place. More than 17,000 buildings were destroyed, including the custom-house, court-house, post-office, gas-works, the principal newspaper offices, 32 hotels, 3 railroad depots, 8 school-houses, 10 theaters and halls, 41 churches, 5 grain elevators, and all the national banks but one. The loss on buildings was estimated at \$50,000,000; on personal property and merchandise, \$140,000,000; total \$190,000,000, of which a little over \$40,000,000 was recovered on insurance. Many insurance companies were utterly ruined. Not less than \$7,000,000 were contributed in this country and in Europe to aid the sufferers. Over 98,000 persons were rendered homeless, while 200 were killed. The recovery of the city from this calamity was rapid, insomuch that after the lapse of three years scarcely a trace of it could be seen, and almost its only evidence was in the immense improvement of the buildings over all the ravaged district.

CHICKADEE, *Parus atricapillus*, is distinct from the European blackcap. It is about 5½ in. long, and 8 in. in spread of wings. Head and neck, and a patch on the throat, black; other plumage, ash-gray and brown; tail edged with white, and a white bar on the wings. Where it has not been driven away by the English sparrow, it destroys great numbers of canker worms and other caterpillars. It is a very lively, sociable, and useful bird.

CHICKAHOMINY, a river in Virginia, rising n.w. of Richmond and running e. between the James and the Pamunkey to the w. line of James City co., where it turns abruptly s., and after a course of about 10 m., joins the James. The surrounding country e. of Richmond is level, and in one section there is a large swamp. On and near the C. in the early years of the civil war occurred many of the most important military movements, skirmishes, and battles—here mentioned in the order of time. In 1862, the peninsular campaign on the part of the union army began with the siege of Yorktown, the objective point being Richmond, to reach which it was necessary that the C. should be crossed. McClellan, on the union side, had 118,000 men when the siege was begun, April 5. On the other side, the confederates had 15,000 men in Yorktown, and about 50,000 more scattered over n. Virginia, all under gen. Joseph E. Johnston. The 6th of May was the day for opening fire upon Yorktown, but on the 4th Johnston left the place, taking guns, baggage, etc., and retreated towards Richmond. On the 5th he was assailed by Hooker; and Longstreet, who commanded the rear of the confederates, turned on the defensive just as he had passed Williamsburg. He was met by Hancock's division, and was compelled to abandon his works after a sharp fight; but Longstreet held his position long enough to secure the confederate trains from pursuit. This was the battle of Williamsburg. The union loss was 1856 killed and wounded, and 372 missing. The confederate loss was about the same. On the 27th of May occurred the battle of Hanover Court-House, in which the union loss was 53 killed and 344 wounded and missing. The confederate loss must have been much greater, for McClellan's report says there were about 200 of their dead buried by our troops, and 730 prisoners were sent to the rear. The confederates had now concentrated in and around Richmond, where they had 67,000 men. The next fight on the C. was the battle of the Seven Pines, or of Fair Oaks, which took place on the 31st of May, and resulted in a substantial union victory. The confederate leader, gen. Johnston, was severely wounded, and their losses were very heavy, but, as in most cases, no trustworthy report was made of the numbers. The union army lost 890 killed, 3,627 wounded, and 1222 missing. It is well known that the confederates felt this to be a disastrous defeat, and in common with the people of the northern states, they expected that the next move would be the capture of Richmond; but, for reasons concerning which it is to be said only that they were never explained to the general satisfaction of the people in the northern states, McClellan made no demonstration, and soon the almost defenseless city was powerfully fortified under the direction of gen. Robert E. Lee, who had superseded Johnston in the confederate command. The fourth of the contests of the C. was the battle of Mechanicsville, June 26, and was not important in results. The confederates made several attacks upon two union brigades, but finally abandoned the work after losing about 1500 men; federal loss, 300. A more important action which occurred June 27, is known as the battle of Cold Harbor, or Gaines' Mill; the confederates call it the battle of the Chickahominy. Their loss was about 9,500; the union loss, 4,000 killed and wounded, and 2,000 prisoners. The sixth conflict in the neighborhood of the C. is known as the battle of Savage's Station, June 30, and was not an important affair. The losses were: union, 600; confederate reported at 400. The next was the battle of Frazier's Farm, also June 30, in which there was some sharp fighting, resulting in a union loss of 300 killed and 1500 wounded; and on the other side, 325 killed and 1700 wounded. The battle of Malvern Hill occurred July 1, and involved a union loss of 375 killed and 1800 wounded; and of confederates, 900 killed and 3,500 wounded. All these engagements from June 26 to July 1 cost the federals 1582 killed and 7,709 wounded; and the confederates 3,150 killed and 15,255 wounded. Including prisoners and missing, the totals of loss were:

union, 15,429; confederate, 19,405. The object, on the part of the confederates, was to relieve Richmond from the threatened siege and capture; and they succeeded. Near the end of the summer the union armies were withdrawn and combined to form the army of the Potomac. But nearly two years later there occurred one more (the second) battle of Cold Harbor, when Grant had command. The fight took place June 3, 1864, and was substantially a check of the union advance. The federal losses were about 7,000 in all; the losses on the other side were said to be only half as many. It was at this time that Grant sent to Washington the historical dispatch: "I propose to fight it out on this line if it takes all summer."

CHICKAMAUGA, BATTLE OF, Sept. 19-20, 1863, between the union army of the Cumberland, led by gen. Rosecranz, and the confederate forces led by gens. Bragg and Longstreet. The forces on the union side numbered about 55,000, a quarter of whom were not engaged; the losses were 1644 killed, 9,262 wounded, and 4,948 prisoners; total, 15,854. The confederate reports embrace but two thirds of their army, and show 1394 killed, 8,974 wounded, and 882 missing; total, 11,250. A few days after the battle gen. Rosecranz was relieved, and gen. Grant placed in command. The battle was credited as a victory for the confederates, though no substantial advantage was gained by them.

CHICKAREE, a popular name for the red squirrel, *sciurus Hudsonius*. It abounds in the southern and middle Atlantic states, and is esteemed for the tenderness and flavor of its flesh. It is not so gentle or so easily tamed as the gray squirrel.

CHICKASAW, a co. in n.e. Iowa, on the Wapsipinican river and its tributaries, reached by the McGregor and Missouri river and the Cedar Falls and Minnesota railroads; 576 sq.m.; pop. '70, 10,180. The surface is prairie and woodland, and the soil fertile; agriculture is the chief business. Co. seat, New Hampton.

CHICKASAW, a co. in n.e. Mississippi, on the head waters and tributaries of the Tombigbee river, and touched by the Mobile and Ohio railroad; 990 sq.m.; pop. '70, 19,899—10,069 colored. The county is a part of the territory ceded by the Chickasaw Indians. It has a level surface and fertile soil, producing corn, cotton, etc. Co. seat, Houston.

CHICKASAW BLUFFS, BATTLE OF, Dec. 29, 1863. The siege of Vicksburg being in progress, gen. Sherman (union) was ordered to make an attack in the rear, and for that purpose sent a force up Yazoo river to land above the city and approach it from the north. In this march they came upon a bayou held by a confederate force strongly intrenched. Several attempts were made to force a passage, but without success. The union loss was 192 killed, and 982 wounded. That of the other side was very small.

CHICKASAWS, a nation of Indians occupying a section of the Indian territory, embracing 6,840 sq.m. on the left bank of the Red river. According to their traditions and the evidence of philology, they are closely connected with the Creeks and Choctaws; and they believe that they emigrated with those tribes from the west, crossed the Mississippi, and settled in the district now forming the n.e. part of the state of Mississippi. Here De Soto visited them in 1540. From the first they were hostile to the French, and were frequently at war with them; but with the English they were generally friendly. In 1786, they made a treaty with the United States, and in 1793, they aided the whites in the war against the Creek Indians. In the early years of the present century, part of their territory was ceded for certain annuities, and a portion of the tribe migrated to Arkansas; and in 1832-34, the remainder, about 3,600 in number, surrendered to the federal government the 6,642,000 acres of which they were still the owners, and entered into a treaty with the Choctaws for incorporation into that tribe. This union was afterwards dissolved and by paying the Choctaws \$150,000 they secured full possession of their present territory. In the civil war they assisted the confederates, but their rights were restored by the Union government in 1866. The next year they surrendered 7,000,000 acres of land at 4½ cents per acre, the money (\$300,000) to go to their late slaves unless, within two years, they adopted them as members of the tribe. In Jan., 1873, they concluded to adopt the negroes. The nation has a printed constitution prefaced by a declaration of rights, which asserts that all political power inheres in the people; that all men should be free to worship God according to the dictates of their conscience, and not be compelled to attend, erect, or support any religious ministry against their consent; that there should be freedom of speech; that there should be security from unreasonable searches of property or person; that every person accused of crime should have a speedy trial. All free males 19 years old or over who are Chickasaws by birth or adoption, may vote, unless idiotic, insane, or convicted of infamous crime. There are a senate and house of representatives, the latter of 18 members elected annually by the voters of the counties or districts. A representative must be 21 years old. There are 12 senators elected for two years from the four districts of the state. A senator must be 30 years old, a Chickasaw by birth or adoption, and a resident of his district six months. The governor must have all the qualifications of a senator; he is chosen for two years by popular vote, and has about the same powers and functions as a governor of one of the states. There is a supreme court consisting of a chief and two assistant justices elected to the legislature for four years. There are also circuit and county courts. The

nation has in the custody of the federal government \$1,200,000 in bonds on which interest is paid. In 1873, the number of Chickasaws was about 6,000. One newspaper is published at Tanlequah.

CHICKEN SNAKE, or MILK SNAKE, *Ophibolus Eximius*, a harmless individual of the serpent tribe, frequenting houses, stables, and dairies. It is sometimes 5 ft. long, though usually much less; the color is milky white above, sometimes tinged with red, with dusky spots along the vertebral line and smaller spots along the sides, the abdomen silver white or yellowish. It feeds on insects, mice, toads, frogs, and small birds.

CHICKERING, JONAS, 1798-1853; a self-taught piano-maker of Boston, who succeeded in establishing the largest piano-manufactory in the country, at times producing at the rate of 1,500 instruments in a year.

CHICOT, a co. in s.e. Arkansas, on the Louisiana border and the Mississippi river, intersected by Crooked and Mason's bayous; 820 sq.m.; pop. '70, 7,214-5,393 colored. The surface is level, and in some parts is subjected to inundations; chief productions, corn and cotton. Co. seat, Lake Village.

CHICOUTIMI, the n.e. section of the organized territory of the province of Quebec, Canada; little settled except along the bank of the St. Lawrence and on the Saguenay rivers; 23,753 sq.m.; pop. '71, 17,493, all except about 100 being Roman Catholics, and all except about 800 of French descent. The surface is mostly rugged, and there are immense pine forests of great value. Chief town, Chicoutimi, on the Saguenay, 75 m. from the mouth.

CHIEF-JUSTICE, the presiding justice of the supreme court of the United States, and of the courts of highest jurisdiction in most of the several states. The chief-justice of the United States administers the oath on the occasion of the inauguration of the president and vice-president; he presides when an impeached president is tried, and has the nomination of certain judicial officers.

CHIE'TI (Province). See ABRUZZO, *ante*.

CHI- (or TSIN-CHI-) HOANG-TI, or CHING-WANG, Emperor of China from 246 to 210 B.C. He is said to have consolidated eight or more feudatory states in a single kingdom, which covered nearly the territory now occupied. One of his monuments is the great wall, built to keep out barbarians.

CHILD, LYDIA MARIA, b. Mass., 1802. When 22 years of age she published *Hobomok, an Indian Story*, and a year afterwards *The Rebels, a Tale of the Revolution*, in which she gave a speech by James Otis, and a sermon by Whitfield, both long believed to have been made by the men themselves. For eight years she was the editor of *The Juvenile Miscellany*, a monthly magazine for the young. Among her earlier works are: *The American Frugal Housewife*; *The Girl's Own Book*; and *The Mother's Book*. She was among the first of the New England anti-slavery writers, beginning with *Appeal in behalf of that Class of Americans called Africans*; and in 1841 she became one of the editors of the *National Anti-Slavery Standard*, in which paper she published her popular *Letters from New York*. Subsequently she published *History of the Condition of Women in all Ages and Nations*; *Biographies of Good Wives*; *Life of Isaac T. Hopper*; *Progress of Religious Ideas*; *Autumnal Leaves*; *Looking towards Sunset*; *The Freedman's Book*; *A Romance of the Republic*, etc.

CHILDBIRTH. See MIDWIFERY, *ante*.

CHILDREN, JOHN GEORGE, 1777-1852; an English scientist who traveled in the United States, devoting his attention chiefly to electricity and galvanism. Among his papers, are those discussing the conversion of iron into steel by union with diamond, and a method of extracting silver from the ore without amalgamation. He translated Berzelius on the blow-pipe, and Thenard on chemical analysis. He was for some years secretary of the royal society.

CHILDREN'S AID SOCIETIES, first established in New York city, chiefly by the exertions of Charles L. Brace, about the year 1853. The object of this and its many imitative societies is to care for the poor and neglected children of large cities, to rescue them from want and crime, afford rudimentary education, and provide homes for them, usually among the farmers of the agricultural states. At the last annual meeting of the New York society, the report showed that, during the 26 years of its operation, 55,717 persons had been sent to homes and places of work, and of these more than 45,000 were children. During the year 1879, no less than 3,713 persons were sent to homes, of whom 1920 were boys, 1380 girls, 210 men, and 203 women. In the lodging-houses, during 26 years, 200,000 different boys and girls have been sheltered and partly fed and instructed. In the industrial schools over 50,000 poor little girls have been taught. The society brings forward the police statistics on crime to show that "vagrancy and crime among young girls have been greatly diminished during the past 15 or 20 years; while among boys, criminal offenses have not grown with the population, but have been held decidedly in check." Among 162, 153 boys who, during the past 25 years, have been in the newsboys' lodging-house, there has been no case of contagious disease, and only one death. The other boys' lodging-houses have been almost equally fortunate. Statistics are given to show that since the establishment of the sick children's mission and summer

home six years ago, 1000 lives annually have been saved under diarrheal diseases alone, and that the general death-rate has been reduced from 33.76 to 24.93 per 1000. The total expense of the 21 industrial schools in 1879 was \$71,540.15, and the average attendance 3,632, making the annual cost for each child \$19.69. The cost in 1878 for each child in the public schools, not including rents, was \$38.41; this expense not including food or clothing. In the lodging-houses, 13,652 boys and girls were fed, sheltered, and taught during the year, at a total expense of \$47,143.66. Deducting the receipts, together with the cost of construction (\$26,916.17), the net cost was \$20,227.49; dividing this by the nightly average attendance, the average cost to the public of each child was \$42.67. The average cost per year of each prisoner in the Tombs is \$107.75, and the Roman Catholic protectory draws from the city treasury over \$100, annually, for each of its inmates. The total number placed out by the society, mainly in western homes, during last year, was 3,713; the total cost for railroad fares, clothing, food, salaries, etc., was \$29,679.48; the average cost to the public, accordingly, for each person was \$8.04. Yet any one of these children placed in an asylum or poor-house for a year would have cost undoubtedly nearly \$140. The number who enjoyed the benefit of the summer home was 2,912; the total expense, deducting cost of construction, \$1000.28, and rent of 1878, \$350, was \$5,036.30; making the average cost for each child \$1.89.

CHILDS, GEORGE WASHINGTON, b. Md., 1829; a journalist, for many years and now proprietor of the *Philadelphia Ledger*, one of the earliest and most successful cheap newspapers of the country. He is noted especially for liberal patronage of men of letters, and for generosity towards deserving charities. C

CHILI (*ante*), though less revolutionary than some of its sister republics, has been subjected to several forcible attempts to change the government. The most formidable of these was in 1851. At first the insurgents were victorious, but after 4,000 men had fallen in battle and great damage had been done to business and commerce, the government succeeded in effecting peace by money more than by arms. This was during the presidency of Don Manuel Montt, a man of great ability. He restored peace and prosperity to the country, and it has since been free from internal strife. In 1864, C. sympathized warmly with Peru against Spain, and in the following year its coast was blockaded by a Spanish fleet. March 31, Valparaíso was bombarded, notwithstanding the protest of the foreign ministers and consuls. Thousands of shot and shell were thrown into it, destroying many public and private buildings and involving a loss of 10 millions of dollars, the chief part of which fell on the foreign residents. The remonstrances of the European governments soon compelled a cessation of hostilities and the raising of the blockade. In 1871, a treaty of peace was negotiated through the mediation of the United States government, and signed at Washington. During the past few years C. has advanced greatly both in material and intellectual development. New mines are worked, agricultural schools and societies are exerting a beneficial influence, and great improvements in rivers, harbors, and streets are projected. In 1877, more than 1200 m. of railroad and nearly 5,000 m. of telegraph were in operation, and additional lines of both are in progress. There are 500 efficient government schools, and an equal number established by cities, churches, and private persons. Two normal schools, for male and female teachers are in good condition. The government university at Santiago has a preparatory department connected with its higher course. The conciliar seminary combines collegiate and theological studies. There are also at the capital agricultural, naval, and military schools. The national library, founded by the Jesuits, contains 25,000 volumes, many of which are on theological subjects. In 1843, a dispute arose between C. and the Argentine Republic for the possession of Patagonia. Many unsuccessful attempts to settle it were made, and war between the two countries often seemed imminent, but in 1879 a treaty was signed by which the disputed territory was ceded to the Argentine Republic. C. having transferred a portion of disputed territory to Bolivia on condition that the Chilians residing in it should not be taxed, Bolivia did refrain from taxation but confiscated some property owned by a Chilian company. Upon this C. sent troops into Bolivia. Peru offered to mediate between the parties, but the offer having been rejected an alliance followed between Bolivia and Peru, and, in April, 1879, war against C. was declared. Hostile operations have been carried on with great energy. In a naval engagement the Chilians captured the powerful iron-clad steamer *Huascar* and turned it against its former owners. Peru, with inferior vessels, has since accomplished several daring exploits, and the war goes on with bitterness and varied success. Recently, however, C. has gained decided advantages, capturing Arica, and entering on the siege of Lima. The victories in this war have been not without the accompaniment of indiscriminate pillage and ravage.

CHIL'IASTS. See MILLENNIUM, *ante*.

CHILLAN, a t. in the province of Ñuble, Chili; 120 m. n.e. of Concepción, 35° 56' s., and 71° 37' west. The houses have only a ground floor and are built around rectangular courts; the streets are 60 to 70 ft. wide, having open drains in the center. C. is in the center of a large agricultural district of great productiveness, and is an important outlet for grain and cattle by railroad to Tomé. The place is also celebrated for mineral baths. The town was founded by Ruiz de Gamboa in 1594, but has since been several times destroyed and reconstructed. In 1601, it was wasted by the Indians; in

1657, by an earthquake, and in 1797, by the overflow of the river Nuble. The people then removed to La Horca, where in 1835 their town was again leveled by an earthquake. The next year they began to rebuild on the present site, and now have a prosperous town of about 20,000 population.

CHILLICO'THE, a city in Lexington co., Mo., on the Hannibal and St. Joseph, the Chillicothe and Des Moines, and a branch of the St. Louis, Kansas City and Northern railroads, 76 m. e. of St. Joseph; pop. '70, 3,978. It is the largest town in the Grand River valley.

CHILMA'REE, or CHALAMARI, a t. in British India, in the presidency of Bengal, 35 m. s.e. of Rungpur, on the Brahmaputra. It is remarkable chiefly as the seat of a great religious and commercial festival which brings together sometimes 100,000 people.

CHILON, or CHILO, one of the seven sages of Greece, by birth a Lacedæmonian. He appears to have lived about the 6th c. B.C. It is said that he died from joy, on learning that his son had gained a prize in the Olympian games. Many of his apophthegms have been handed down to us. According to Chilon, the greatest virtue of man was prudence, or well-grounded judgment as to future events.

CHIMA'RA, or CHIMARI. See CERAUNIAN MOUNTAINS.

CHIMAY, JEANNE MARIE IGNACE THÉRÈSE, Princess of; 1775-1835; daughter of count Cabarrus, minister of finance in Spain; early married to M. de Fontenay, soon divorced, and next married to Tallien, the French revolutionist, whom she induced to engage in a plot for the overthrow of Robespierre, and thus made herself the chief promoter of the revolution of July, 1794. Her beauty and her free manners with her consequent social triumphs gave her husband offense, and he left her, going with Napoleon to Egypt. A mutual divorce followed on his return, and Jeanne then married count Caraman, with whom she lived peaceably. While ranking first among the beauties of the time, she was never admitted to court circles. She is represented as amiable, witty, kind, and always ready to serve even her enemies.

CHIMES (*ante*). This class of music is believed to have originated in some of the German monasteries, and the first instrument for the production of C. to have been made in 1487 at Alost, in the Netherlands. Among the celebrated chimes of Europe are those of Copenhagen, Ghent, and Amsterdam. A number of bells is required for a proper execution of this music. The *carillons à clavier* are played like a piano-forte; the keys are handles connected with the bells by rods or cords, and the *carillonneur* employs his hands and feet to play an air. The pedals communicate with the larger bells for the bass. The keys on which the treble notes depend are struck with the hand, which is protected by a leather covering. It is stated that Potthoff, a blind organist of Amsterdam, was able to perform fugues on this instrument. The invention of carillon machinery is of modern origin; one person now is able by simply turning a barrel similar to that of a music box to chime eight bells with little difficulty. C. have been largely introduced into our American churches. In New York there are four churches that have large chimes, St. Thomas, Grace, Trinity, and St. Ann's. The C. of Christ church in Philadelphia, Christ church in Boston, and Trinity church in New York, are probably the oldest in this country. Little is known of the Trinity church bells, except that five of them were cast in London before the year 1845. The ten bells have an aggregate weight of about 15,000 lbs.; the largest weighs 3,081 lbs., the smallest, 700 lbs.; they are hung in a frame-work of wood, and the machinery is somewhat primitive. St. Thomas church has ten bells which were cast at Meneely's in w. Troy, and put up in 1874; they are very fine in tone and tune. Grace church has ten bells with an aggregate weight of 10,300 lbs., the largest, called the Rector's bell, weighs 2,835 lbs.; they are played on by means of a *carillon à clavier*, like those in Holland. The C. of old Christ church in Philadelphia are of historic interest. These bells were sent from England as a present from queen Anne; they were taken down during the revolution, and sunk in the Delaware river, as it was feared the British might capture them. At the close of the war they were hung in the old belfry; and may now be heard on every holiday through the year. Christ church in Boston also has an ancient and notable chime. Full and partial chimes, the latter called peals, can now be heard in all parts of the country. There are three sets of chimes in Troy, N. Y. The church of the Good Shepherd, in Hartford; St. James church in Birmingham, Conn.; old St. John's in Savannah, Ga.; churches of different denominations in Indianapolis, Petersburg, Va.; Cleveland, O.; Concord, N. H.; Rochester, N. Y.; and many others, produce chime music. Worth mentioning are those of St. Ann's, in Brooklyn; St. John's, in Newark; Grace church, and St. Patrick's, in Buffalo; the cathedral of the Immaculate Conception, in Albany; St. Paul's, in Reading, Pa.; Pilgrim church, in St. Louis; in the bell-tower of Cornell university, at Ithaca, N. Y.; and in the college chapel at Amherst, Mass. The half C. and peals in the United States are very numerous. (See BELL, *ante*.)

CHIMSEYANS, Indians of the n.w. coast of North America, between 53° and 55° n., including several small tribes. They are noted, like the Indians of Alaska, for disfiguring themselves by inserting a large piece of wood or ivory in the under lip. Their language is said to be sonorous and comprehensive.

CHINA WAX, produced by an insect which lies on the ash trees of China. It is scraped from the limbs, melted and strained, when it resembles bees' wax.

CHINCHA ISLANDS, three small islands in the Pacific, 13° 38' s. and 76° 28' w., 12 m. from the coast of Peru, and 106 m. from Callao. The largest, known as north island, is only about 170 acres in surface. The importance of the islands is owing to their immense deposits of guano. They are of granitic formation, rising from the sea in precipitous cliffs, worn into countless caves and hollows, which furnish convenient resting places for sea-fowl. Their highest point, now 113 ft., was once nearly 90 ft. higher, the whole deposit being of guano. The name of the islands and of the town and valley of Chincha in the mainland is derived from an ancient Indian race, which has left some interesting relics of its sojourn. A stone idol and two water-pots of grotesque form were discovered under 62 ft. of guano; and a number of wooden idols, two regal emblems, and a curious stone slab have been found. In 1846, the amount of guano in these islands was estimated to be 18,250,000 tons, and in 1852 there still remained 12,360,000 tons. The supply is now nearly exhausted. Between 1853 and 1872, 8,000,000 were taken from the n. and middle islands. In 1868, there was a population of 6,000; in 1874, only 105 remained.

CHINCHAYCO'CHA, a lake in Peru, 10° 42' s. and 75° 40' w., 10 m. s.s.e. of Pasco, and 13,000 ft. above sea-level. It is 35 m. long by about 7 wide.

CHINCH BUG, *Blissus leucopterus*, an insect which has sometimes done immense damage to wheat and other crops in the western United States. The female lays her eggs on the ground, and there are often two swarms of bugs in a single year, one in June and one in the autumn. The chinch bug is from a seventh to a fifth of an inch in length; the wing-covers are black, with three or four white dashes, sometimes wanting; the body is usually black, though the unwinged young are at first red, with a white band on the back.

CHINCHEW, or CHINCHU, an ancient and famous port of China, in the province of Fuh-keen, 27° 57' n. and 118° 35' east. Though occasionally visited by missionaries and others, Chinchu is not one of the treaty ports. The chief exports are tea, sugar, china-ware, tobacco, and nankeens. The English Presbyterians have had a chapel in the city since 1862. In the middle ages this city was the great port for western trade with China, and was known to Europeans as Zayton.

CHIN-INDIA, or FARTHER INDIA. See SIAM, BURMAH, COCHIN CHINA, *ante*.

CHINOOKS, Indians of n.w. North America who once inhabited the region around Columbia river, in Oregon. They are now nearly extinct.

CHION, OF HERACLE'A, one of Plato's pupils, who sought to liberate his native city by slaying the tyrant Olearchus, but the friends of the tyrant slew the conspirators and the oppression of the people became still greater.

CHIPMAN, DANIEL, LL.D., 1762-1850; brother of Nathaniel; educated at Dartmouth college and began law practice in Vermont in 1790. He was a member of the legislature and of congress, and professor of law and jurisprudence in Middlebury college from 1806 to 1816. He was the first official reporter of the decisions of the supreme court of the state, and the author of *An Essay on the Law of Contracts for the payment of Specific Articles*.

CHIPMAN, NATHANIEL, LL.D., 1752-1843; a native of Connecticut, educated at Yale, served as a lieut. in the revolutionary army, and was present at the battle of Monmouth. He was admitted to the bar in 1779, and began practice in Vermont, where he became chief-justice of the state. In 1791, he was a member of the convention called to decide whether Vermont should join the union, and was one of the commissioners to arrange for the state's admission. Washington appointed him judge of the U. S. court for the district of Vermont. In 1797, he was chosen U. S. senator, and in 1813, he was again elected chief-justice of the state. He was afterward for 27 years professor of law in Middlebury college. Among his published works are *The Sketches of the Principles of Government*; a volume of *Reports and Dissertations*; and *Principles of Government—a Treatise on Free Institutions, including the Constitution of the United States*.

CHIPMUNK, the common name of the ground squirrel, *tamias striatus*, especially in the New England and northern states. See SQUIRREL, *ante*.

CHIPPEWA, a co. in n.e. Michigan, on lakes Huron and Superior and the straits of Ste. Marie; 1500 sq.m.; pop. '70, 1689. The surface is hilly, and mostly covered with pine forests. Co. seat, Sault Ste. Marie.

CHIPPEWA, a co. in s.w. Minnesota, on the Minnesota, Chippewa, and Chetomba rivers, reached by the St. Paul and Pacific railroad; 2,445 sq.m.; pop. '70, 1467. Productions, almost entirely agricultural. Co. seat, Chippewa City.

CHIPPEWA, a co. in n.w. Wisconsin, on the head-waters of the Chippewa river; 4,000 sq.m.; pop. '70, 8,311. The surface is varied, and to a great extent covered with forests. Lumbering is the chief business. Co. seat, Chippewa Falls.

CHIPPEWA, a village in the province of Ontario, Canada, at the junction of the Chippewa with the Niagara river, 2 m. above the great falls. It was here that gen.

Scott defeated the British, July 5, 1814. The Americans had 1900 men, of whom 68 were killed and 267 wounded; the English had 2,100 men, of whom 138 were killed and 365 wounded.

CHIPPEWA RIVER, in Wisconsin, rising in the n.w. part of the state and emptying into the Mississippi just below lake Pepin. Its length is about 200 miles.

CHIPPING BIRD, or CHIPPING SPARROW, *Spizella socialis*, a common American bird, 5 or 6 in. long, white underneath, back and sides ash color, with stripes of black and white. Its half-dozen notes of song are repeated with great rapidity.

CHIUQUIMU LA, a department of Guatemala, running from the Caribbean sea along the Honduras border; 4,000 sq.m.; pop. about 75,000. The river Motagua runs through the middle of C. and empties into the gulf of Honduras at San Tomas de Castillo, one of the best ports in Central America.

CHIKUITOS, a nation of Indians once very powerful in South America, inhabiting the region w. of Paraguay river. Early explorers described them as an intelligent, warlike, and independent people, living in families, subsisting by agriculture and by the chase, very numerous, and having ample material resources. The Spaniards first invaded their country in 1535, and there were frequent wars with little advantage to the whites. The first permanent white settlement among them was not effected until 1691, when a Jesuit mission was established. The missionaries soon obtained great influence over them, and agriculture and arts prospered, and a considerable trade grew up with the adjoining Spanish settlements. The missions were prosperous until the expulsion of the Jesuits in 1767. Thereafter the Indians rapidly deteriorated, and within a third of a century following the abandonment of the missions two thirds of the C. nation had disappeared.

CHIROMANCY, fortune-telling by a study of the human hand (always the left hand), once widely believed in and still practiced to some extent. The points to be observed are the lines, the projections, the joints, the nails, and the contour of the thumb and fingers. The principal line is *the line of life*, running in a curve from the upper joint of the forefinger around the ball of the thumb to the joint of the wrist. If this line shows four distinct and equal furrows near its beginning at the forefinger joint, the person is promised an easy attainment of wealth and honor. If the line be regular and deeply colored, a long and happy life is predicted; if it be freely marked, tortuous and broken, it foretells ill health and short life. If short perpendicular lines run from the line of life toward the palm of the hand, the person may be expected to go on a long journey; if toward the wrist, to be exiled. If the line of life be narrowed but long and strongly colored, it indicates ingenuity and wisdom; a deep line, equally colored, denotes a malicious disposition; and if separated near the center by sharply defined cross lines, it is a sign of approaching death. The next important line is *the line of health*, starting with the line of life and running nearly or wholly across the middle of the hand. If the line be clear and unbroken, it indicates excellence of body and mind; if it be broken and feeble, timidity and ill health are indicated. *The line of fortune*, or *happiness*, is below the line of health, and runs from the base of the fore to the base of the little finger. When this line is distinct and straight it indicates happiness and pleasant temper; if it begins close to the upper side of the hand, it indicates pride; if red in the upper section, envy is foreshadowed; a cross line, so that the two form an upright cross, indicates generosity; if broken and crossed by small lines near the middle, it indicates duplicity. Another line not found in all hands is *the line of the joint*, or *line of the triangle*, extending from the base of the little finger to the middle of the joint of the wrist. When this line is clear, it promises great success after much difficulty. The *mountain of Venus* is the elevation at the base of the thumb, and when smooth and unfurrowed a happy temperament is indicated. The *mountain of Jupiter* is the fleshy projection at the base of the forefinger; that of *Saturn* at the base of the middle finger; that of the *sun* at the base of the ring finger; that of *Mercury* at the base of the little finger, and that of the *moon* is the elevation or bunch on the lower side of the hand. When these mountains are clear and smooth, the indications are of Jupiter, a heart inclined to virtue; of Saturn, love of labor, and simplicity of character; of the sun, eloquence and vivacious temperament; of Mercury, firmness in men, and modesty in women; of Mars, courage and heroism; of the moon, a tranquil disposition inclined to melancholy. The lines and shades on the mountains have their significance. Small lines near the little finger, parallel with the line of fortune, indicate happy wedded life, and some say their number foretells the number of children. One more line is called *the milky way*, running downward on the mountain of the moon from the wrist joint toward the little finger; if it be long and clearly defined, it foretells success in studies or in arts or fortune in a distant land. Small white spots under the nails indicate the fulfillment of wishes, at near or remote periods as they are far or near the roots. Aristotle regarded C. as a distinct science; the Roman soothsayers, and even the emperor Augustus, practiced it; in the middle ages it was studied with alchemy and astrology by the greatest philosophers; the church tolerated it while condemning astrology, or its interference with the doctrine of human liberty. No longer regarded as scientific, it presents at least a curious study.

CHIRONECTES, a genus of salt-water fishes remarkable for their grotesque forms. The mouse-fish may be taken as a specimen.

CHISA'GO, a co. in e. Minnesota, on the Wisconsin border; 450 sq.m.; pop. '70, 4,358. It is intersected by the Lake Superior and Mississippi railroad. The principal productions are wheat, corn, oats, hay, and butter. Co. seat, Chisago City.

CHISELHURST, a parish in Kent, England, 11 m. s.e. of London. It was here that Napoleon III. fixed his residence in 1871, and died, Jan. 9, 1873. His widow, the empress Eugenie, dwells in Chiselhurst (1880).

CHISHOLM, CAROLINE (JONES), b. England, 1810; a noted philanthropist who settled in Australia in 1838 and founded at Sydney schools and asylums for destitute girls. In 1840-44 she procured employment for more than 11,000 persons, and lent in small sums about \$6,000, of which all but \$120 was returned. In her honor the people of Sydney founded the "Family Colonization Society."

CHITTAGONG HILL TRACTS, a district on the e. frontier of British India, between $21^{\circ} 13'$ and $23^{\circ} 47'$ n., and $91^{\circ} 46'$ and $92^{\circ} 49'$ e.; 6,882 sq.m.; pop. '72, 69,607; among whom were only 31 Christians. The region is hilly, with deep ravines and prominent cliffs, covered with gigantic creeping plants. The crops are rice, corn, tobacco, and cotton.

CHITTELDOOG, or **CHITRADURG**, a t. in British India, in the province of Mysore, 280 m. w.n.w. of Madras. It is in a fertile plain, and was once one of the strongest places in India. The present fortress crowns a high rock in the rear of the town, and is a formidable defense. Hyder Ali besieged C. in 1776, getting possession eleven years later, but then only through treachery.

CHITTENDEN, a co. in n.w. Vermont, on lake Champlain; 517 sq.m.; pop. '70, 36,480. It is drained by the Winooski and Lamoille rivers, and traversed by the Central Vermont, the Rutland and Burlington, and the Burlington and Lamoille railroads. The productions are wheat, corn, oats, potatoes, hay, cheese, butter, wool, and maple sugar. Co. seat, Burlington.

CHITTENDEN, MARTIN, 1766-1840; son of Thomas; a graduate of Dartmouth college, and for many years in judicial offices in Vermont. He was chosen to congress in 1803, and four times thereafter; and was governor of the state from 1813 to 1815.

CHITTENDEN, THOMAS, 1730-97; the first governor of the state of Vermont, b. in Conn., where he was a member of the legislature. In 1774, he settled in Vermont, and participated in all the political action of the people in councils and conventions, until the territory became a state, before and after which period he was the governor.

CHITTY, JOSEPH, 1776-1841; a lawyer of England whose text-books have been considered almost necessary for students and young practitioners. The chief of his works are, *Treatise on the Parties to Actions and to Pleadings*; *Treatise on the Law of Nations relative to the Legal Effects of War on the Commerce of Belligerents and Neutrals, and on Orders in Council in Licenses*; *Political Treatise on Criminal Law*; and *Synopsis of Practice in the King's Bench and Common Pleas*.

CHLAMYDOSAU'RUS, a lizard of Australia, which has on its neck a singular mantle or plaited frill covered with scales and edged with spines. When full grown, this lizard is nearly 3 ft. long.

CHLAMYS, an outer garment worn by the Greeks and some other people of the east. It was of wool, smaller than the more common blanket, of finer material, and often of brilliant colors. It was an oblong square, twice as long as its width. The wearer fastened the corners of the shortest side to the middle of the chest, the chlamys falling down over the back to the knees; or when fastened on the right shoulder it fell over the left arm and side. The chlamys for women often had a fringe or border of rich colors.

CHLORAL (*ante*), a liquid prepared from absolute alcohol by the action of dry chlorine. It is composed of carbon, hydrogen, oxygen, and chlorine, formula C_2HOCl_3 . Combined with water, it forms chloral hydrate, a transparent crystalline substance, having the appearance of alum, sometimes administered to induce sleep. Its effect is attributed to chloroform produced in the system from the chloral by the alkaline reaction of the blood. As a rule 20 grains causes in a healthy adult a light and refreshing sleep, after about half or three quarters of an hour, without headache or other bad results. Repeated use blunts the good effect, and causes serious nervous demoralization; overdoses have caused death. Chloral hydrate has special value where the use of opium is inadmissible; also in delirium tremens, mania, rheumatism, gastralgia, and as antagonistic to tetanus and the effects of strychnia.

CHLORIC ETHER, a name formerly given to a compound of chlorine and olefiant gas, also called chloride of ethylene, or *Dutch liquid*. Now applied to a mixture containing one part of chloroform and eight or nine parts of strong alcohol. Dr. John C. Warren's "chloric ether," used by him as an anæsthetic, contained one part of chloroform and two of alcohol. C. E. is used as a means of administering chloroform inter-

nally; it is a mild anodyne, useful to allay restlessness and spasmodic disturbances, as of the air-passages.

CHLORO METH'YL, or METHYLENE BICHLORIDE, CH_2Cl_2 ; a liquid—clear, volatile, of pleasant odor; when inhaled, producing anæsthesia more quickly than chloroform, and usually free from disagreeable consequences. Like chloroform, not absolutely safe.

CHLOROX'YLON, plants of the order cedrelaceæ, the fruit having only three cells and splitting into three parts. The satin-wood of India is a specimen.

CHOATE, RUFUS, LL.D., 1799–1859; a native of Massachusetts, graduated from Dartmouth college in 1819, and a tutor there for a short time. In 1824, he commenced the practice of law in Danvers, soon removed to Salem, and in 1825 and 1827 was a representative and a senator in the state legislature. In 1832, he was elected to congress, and on the expiration of his term, removed to Boston. In 1841, he was chosen U. S. senator to fill Daniel Webster's unexpired term, the latter having been appointed secretary of state. In 1846, he resumed law practice in Boston, and in 1853, was chosen attorney-general of the state. His mind was acute, his scholarship broad and fine, his rhetoric magnificent. For many years he was recognized as the foremost lawyer of New England, and was especially renowned for eloquence in pleading. His more famous efforts were a eulogy on president Harrison, an address on the landing of the Pilgrims, and a eulogy on Daniel Webster. His works and correspondence have been published.

CHOCTAW, a co. in s.w. Alabama, on the Mississippi border; 800 sq.m.; pop. '70, 12,676—6,872 colored. It is watered by tributaries of the Tombigbee. Productions chiefly agricultural. Co. seat, Butler.

CHOCTAW, a co. in central Mississippi, on Big Black river; 900 sq.m.; pop. '70, 16,988—4,462 colored. Agriculture is the chief business. Co. seat, Greensborough.

CHOCTAWS, or CHAHTAS, a tribe of American Indians now occupying a portion of the Indian territory on Red river, numbering about 16,000, and possessing 10,450 sq.m. of land. When first known to Europeans they occupied the country now forming the w. part of Alabama and s. part of Mississippi. When Louisiana was settled they formed an alliance with the French against the Chickasaws and the Natchez. By degrees they became friendly to the English, and in 1786 they recognized the supremacy of the federal government. About 1800, they began to emigrate beyond the Mississippi. In the war with England and the Creek war they did great service to the union. Georgia gave them special privileges, even making them citizens, but they preferred to emigrate, and were all gone soon after 1830. In 1818, missions were established among them. In the civil war, they went with the confederates, but after it was over new treaties were made by the United States, slavery was abolished, and other necessary changes made. They have a regular constitution, prefaced by a bill of rights. Free males 21 years old and six months citizens of the nation are voters. There is a house of representatives of 17 to 35 members chosen for two years. The governor is elected for two years by the people, and is eligible for four years only out of any term of six. There are courts, supreme, civil, and probate; and justices of the peace. Books are printed in their language, and a newspaper is regularly issued every week at their chief town.

CHODOWIECKI, DANIEL NICOLAS, 1726–1801; a Polish painter and engraver who designed and engraved subjects from the seven years' war, and subsequently the "History of the Life of Jesus Christ," a series of miniature paintings that made him at once famous. Thereafter he was represented by his work in almost every book of importance published in Prussia in which engravings could be used. Still, the picture of "Calas and his Family" is the only one of C.'s that has wide reputation.

CHENIX, a Grecian measure of capacity variously represented as equal to 0.186, 0.248, and 0.495 of an English gallon. It is supposed to have been used chiefly for measuring grain.

CHERILUS, a Greek tragic writer of the time of Thespes and Æschylus. He was a competitor for the tragic prize in 529 B.C. It is said that he took 13 prizes, and was the author of 150 tragedies, besides other works that have been lost.

CHERILUS, or SAMOS, a Greek writer, b. about 470 B.C.; author of a poem treating of the wars of Greece with Darius and Xerxes. Fragments of his writings have been preserved in the works of Aristotle, Josephus, and Ephorus.

CHOISEUL, CLAUDE ANTOINE GABRIEL, Duc de, 1760–1838; a col. of dragoons during the French revolution, and a warm supporter of the royal cause. He made an attempt to rescue Louis XIV. from the revolutionists, but the royal party was recaptured, a price was set upon C.'s head, and he was compelled to fly. He raised a regiment of hussars and joined the royalist army. He was finally taken prisoner and confined at Dunkirk. He escaped, and sailed for India, but was wrecked on the coast of France, captured, and condemned to death. Yet he escaped death, and at the restoration he was called to the house of peers by Louis XVIII. In the revolution of 1830, he was a prominent member of the provisional government, and afterwards received from Louis Philippe the post of aide-de-camp to the king and governor of the Louvre.

CHOISEUL-GOUFFIER, MARIE GABRIEL FLORENT AUGUSTE, Comte de, 1752-1817; a French scholar who traveled in the east, and published in 1782 the first volume of his *Voyage Pittoresque en Grèce*. During the revolution he adhered to the royal cause, and afterwards went to Russia, where he was made director of the imperial libraries, and of the academy of fine arts. Another part of his work appeared in 1809, and the concluding portion in 1824, after his death.

CHOLERA INFANTUM. A disease of infants characterized by intestinal disturbance more or less obstinate and dangerous. Opinion is unsettled in regard to the nature of the complaint, and it passes under different names in different countries. In this country, besides C. I. a common name for it is *summer complaint*, because it is essentially a disease of hot weather. Most British authorities describe it under the general head of diarrhea, others call it weaning brash, watery gripes, and choleric fever of children. In France it has various names, principally alluding to its location, as colenteritis, follicular enteritis, and gastro-intestinal catarrh, the latter name being also the one in most frequent use in Germany. But the disease as it is known in this country, and doubtless elsewhere, depends upon a variety of pathological conditions, which, however, may change from one to another during the progress of the case. The causes of the complaint are not completely settled, although all the authorities agree that hot and badly ventilated apartments and malaria generally are highly conducive to it. The older American physicians were, with Dr. Benjamin Rush, accustomed to call it infantile bilious remittent fever, and many of the cases which occur in those rural districts where remittent malarial influences prevail have much of the character of remittent fever, but in cities, particularly where the sewerage is bad, and the streets are suffered to be choked with decaying garbage, the diarrhea has more the character of that of typhoid fever, and many of the symptoms are of a general typhoid, that is, of a weak nervous character. Too high a heat maintained in the nursery, will, if continued, probably so alter the functions of secretion as to bring on the disease; especially if the diet is defective, as from poor milk, or the injudicious giving of solid articles of food. It sometimes comes on very suddenly, but is often insidious in its advances, deluding the mother and family with the idea that it is merely a temporary diarrhea that will soon pass away, or can easily be relieved. The attack, however, may commence with violent symptoms, and there will be much excitement of the circulation, with vomiting and purging. There is in all cases great weakness of the digestive and assimilative powers. Milk which has been given but a short time before is voided by the rectum in curds, mixed with greenish slime of various depths of color, and containing fibrinous shreds and gelatinous masses, indicating mucous inflammation, and having a peculiar and diagnostic odor. The evacuations are preceded by colic pains, often intense, the movement usually giving temporary relief. The abdomen may be quite full at first, but gradually, often rapidly, grows gaunt, with more or less rapid emaciation of the whole body. The child becomes peculiarly fretful and impatient, the expression of its features and its general appearance being highly diagnostic to the experienced observer. In advanced stages there is a withered, clammy appearance of the hands, arms and legs, peculiar to the disease. Without change of air or diet, or under bad treatment, the disease usually runs a rapid and fatal course, but sometimes, under fair but not decided treatment, the sufferer lies for several weeks, when, according to statistics, death is more likely than recovery. There is a considerable difference, according to the testimony of practitioners, in the mortality which occurs in the practice of different individuals. In some charitable institutions the deaths of cases of C. I. run as high as 70 *per cent*, even under as good hygienic regulations as may be had in a city, and many private physicians, from the result of their practice, place the percentage of deaths above 50 *per cent*. There are others, and they form a large portion of the profession, who maintain that under their method of treatment the mortality is much less, ranging on an average from 10 to 25 *per cent*, and even below this. All concur as to the importance of pure air and proper diet. Often the simple removal to a mountainous district will, alone, result in recovery; or even a change from hot to cold weather, without removal, will often produce decided relief. As the digestive functions are very much weakened, the food should be the most digestible which can be obtained, also nutritious. If the case be one in which the child is suckled by the mother, but there is reason to suppose that her milk disagrees with it, weaning may be advisable; but, as a rule, the mother's milk is the best food for a child under 14 months of age. When the child is fed from a bottle, beef tea, made either from fresh beef, or from beef extract, may be given with advantage. Farinaceous articles, such as farina, tapioca, corn starch, and arrow root, are, contrary to the ill-advised conclusions of many, not proper food for infants. The only article of the kind that ever ought to be given in a case of cholera infantum, is rice water, which, from its slight astringent properties, may sometimes be given in moderate quantities together with good milk and beef tea. The radical difference between physicians, in the medical treatment aside from hygienic measures, and aside from any reference to the different "schools" of medicine, consists in the degree of reliance to be placed upon opiates and astringents, or in other words, upon palliative treatment, as distinguished from that which seeks to produce a decided change in the functions of the various secreting organs, a great

majority of which are manifestly much deranged in the disease under notice. The bile is scanty and not of normal character, and the inflamed and highly irritated mucous membrane of many parts of the intestinal tract interferes greatly with the functions of the mucous glands of these parts. There has long been a discussion among physicians as to the therapeutical value of mercurial preparations, particularly as to calomel, and its power of influencing the secretion of the liver, and diminishing inflammation. It seems proper therefore to say that in the experience of the most successful physicians it is found that the administration of small and oft repeated doses of calomel in cases of C. I. is attended, as a rule, with decidedly beneficial results; so that in the course of two or three days, frequently in a few hours, a change takes place for the better in the character of the fecal evacuations and in the appearance of the patient. The administration of the calomel alone, given in a little pulverized sugar, slightly moistened and placed on the child's tongue, in quantities from one twelfth to one quarter of a grain, and repeated every two, three, or four hours, will often produce decided relief; but it is generally advisable, or necessary, also to give a slight opiate, such as paragoric elixir, and perhaps a few drops of the tincture or aromatic syrup of rhubarb. The calomel must be persisted in for several days after the evacuations have become natural, although not given so often. It is a rule with but few exceptions among physicians of experience, that an infant cannot be salivated. On the contrary, the child grows strong and hearty under the use of calomel in those cases when the secretions are much deranged and the system reduced. In doses sufficiently small it undoubtedly possesses the power of improving assimilation. Warm baths, or rather warm sponging, and general attention to cleanliness, and the preservation of an equable temperature, should not be neglected. Patients who cannot be removed to the country, may be taken out in an easy carriage and wheeled on the shady side of the street, or in a park or grove.

CHOMEL, AUGUSTE FRANÇOIS, 1788-1858; a French physician long employed in the Paris hospitals; author of *Essai sur les Rhumatismes*; *Éléments de Pathologie générale*; and *Traité des fièvres et des Maladies pestilentiellles*. He was made professor of medicine at the faculty of Paris, as successor to Laennec. He had a more lucrative practice than any other physician in France.

CHONS, or KHONSOU, an Egyptian deity worshiped at Thebes as the great eldest son of Amen-Ra and Mut, and identified with the moon. The Greeks thought him to be a form of Hercules. Like Horus, he is represented as a youthful god, his form mummied, wearing the lock of hair at the right side of his head, and a skull-cap surmounted by the full and dichotomized lunar disk; or hawk-headed, wearing the same. He holds a crook and whip. He was a celestial deity, and at a later time connected with Thoth, and was said to have proceeded from Nu or Han, the celestial waters. A tablet found in a temple at Karnak which was dedicated to this god, records the departure of C. in his ark in the 16th year of the reign of Rameses XII. to the land of Baktan to expel a demon which had possessed the daughter of a king of that country and sister of the queen of Egypt. He succeeded, and returned in his ark 17 years later. The worship of C. appears to have been common in the Ptolemaic period, and figures of the god in porcelain and bronze are not uncommon. He represents the youngest, as Ammon did the oldest, of the divine circle.

CHONTA'LES, a district of Nicaragua, n.e. of lakes Nicaragua and Managua, traversed by the Cordilleras, along the slopes of which are valuable mines. There are a number of small towns peopled chiefly by native Indians. Some of the gold mines now worked by them were worked by the early Spanish adventurers. There is a bed of coal near lake Nicaragua. The grassy plains among the mountains support large herds of horses and cattle. Tropical fruits grow abundantly, and there is good timber in the neighborhood of the mines.

CHOPTANK RIVER rises in Delaware, and flows s.w. through that state and Maryland, forming a wide estuary as it nears Chesapeake bay, into which it empties. It is navigable for small vessels for about 50 miles.

CHOREPISCOPI, an order of ministers of ancient origin, whose functions were to assist city bishops in rural districts or remote places. They acted in a subordinate capacity, and possessed limited powers, acting as colleagues or vicars of the bishops. They possessed the privilege of attending councils in their own right, and not merely as substitutes for bishops. At first they were confined to the eastern church, but began to multiply in the western church in the 5th century. They were succeeded after the 10th c. by archdeacons, vicars general, and rural deans. In the east the order was abolished by the council of Rodicea about 365 A.D.

CHORLEY, HENRY FOTHERGILL, 1808-72; an English author who paid much attention to musical criticism. After long effort he got a position on the London *Athenæum*, and for 35 years conducted the musical department of that journal. He wrote on other subjects besides music, producing the librettos of the *Amber Witch*; the *May Queen*; *St. Cecilia*; *Kenilworth*; *The Sapphire Necklace*; and *Faust*. Other of his works are, *Conti the Discarded*, and *Other Tales*; *Sketches of a Seaport Town*; *Memorials of Mrs. Hemans*; *Lion, a Tale of the Coteries*; *Music and Manners in France and Germany*; *Pomfret*; *Criticisms on Modern German Music*; and *Thirty Years' Musical Recollections*.

CHOROID COAT. See EYE, *ante*.

CHOSROES. See KHOSRU, *ante*.

CHOTEAU, a co. in Montana, on the Canadian border, near the head waters of the Missouri river, drained by the Missouri, the Dog, Milk, Arrow, Teton, Judith, Bear, and other rivers; about 12,500 sq.m.; pop. '70, 517, besides Indians. Co. seat, Fort Benton.

CHOTYN, KHOTIN, or CHOCZIN, a t. in Pessarabia, on the river Dneister, 45 m. s.w. of Kamieniec; pop. '67, 20,917. It is a fortified military post, and once belonged to the Turks, but was taken by the Russians in 1789.

CHOULES, JOHN OVERTON, D.D., 1801-56; a native of England, who emigrated to the United States in 1824. In 1827, he became minister of the Second Baptist church in Newport, R. I. Six years later, he went to New Bedford; in 1837, to Buffalo; in 1841, to the Sixth street Baptist church in New York; and in 1843, to the church at Jamaica Plain, near Boston. In 1847, he returned to his Newport church; and in 1854, accompanied commodore Vanderbilt in his yacht voyage to Europe. Among his publications are *Young Americans Abroad*, and *The Cruise of the North Star* (the commodore's yacht). He also contributed to and edited several historical works.

CHOUTEAU, AUGUSTE, 1793-1839; a native of New Orleans, and a pioneer in north-western settlements. With his brother Pierre he was the founder of the present city of St. Louis.

CHOUTEAU, PIÈRE, 1749-1849; brother of Auguste, and with him the founder of St. Louis, where they settled in 1764. The two were members of an expedition under Laclede, sent by the French government of Louisiana to open trade in the region of the Missouri and upper Mississippi. The brothers remained in St. Louis all their lives, Auguste reaching 99 and Pierre 100 years of age. They were the heads of large families of high standing and great wealth and influence in Missouri and adjoining states.

CHOUTEAU, PIÈRE, 1789-1865; son of Pierre the founder of St. Louis. He was all his life engaged in the fur trade, following the Indian tribes as they retired before white encroachment, and establishing trading-posts in many remote points. In 1824, he and his associates bought the fur-trade interests of John Jacob Astor, and extended their operations over all the regions e. of the Rocky mountains down to Mexico. Chouteau was a member of the convention that framed the first constitution of Missouri.

CHOWAN, a co. in n.e. North Carolina, on Albemarle sound, and bounded w. by Chowan river; 240 sq.m.; pop. '70, 6,450-3,369 colored. The surface is uneven, and the soil fertile, producing corn, cotton, etc. Co. seat, Edenton.

CHRESTIEN, or CHRÉTIEN, DE TROYES, an early writer of French romance, of whose life little is known, except that he was b. at Troyes in the 11th century. It is supposed that he was attached to the court of Philip of Alsace, count of Flanders. The six romances that critics concede to be of his composition are: *Iree et Enide*, from which Tennyson took one of his Arthurian legends; *Uliges* or *Uliget*, a second round-table romance; *Le Chevalier au Lion*; *Guillaume d'Angleterre*; *Le Chevalier de la Charette*; and *Perceval le Gallois*. He also wrote *Tristan, ou le Roi Marc et le Reine Yseult*, and *Le Chevalier de l'Épée*, but these two works are lost.

CHRESTIEN, FLORENT, 1541-96; a Latin poet, at an early age tutor to Henry of Navarre, afterwards Henry IV., who made him his librarian. Chrestien was the author of many translations from Greek into Latin verse, and also of translations into French. He wrote in verse against Ibrach, the apologist of the massacre of St. Bartholomew; but his claim to a place among satirical writers rests upon his share in the *Satyre Manip-pée*, a pasquinade in the interest of Henry IV.

CHRESTOMATHY, a collection of extracts, or text books, useful in learning a language, or in gaining special information.

CHRISTADELPHIANS, a recently organized religious sect in America, whose principles are thus stated: The Old and New Testaments are equally important; God will restore to immortal life all who love him in this life, but those who have not accepted this immortal principle cease to exist at death; there is no personal devil; Christ is the son of God, deriving from the Deity moral perfection, but from his mother a human nature; he has the three-fold character of prophet, priest, and king; the first office he fulfilled by his life and death on earth, and now as priest he mediates before the deity; as king he will return to earth and reign over all the world from the throne of David. The adherents of this sect are few.

CHRISTIAN, a co. in central Illinois, traversed by the Illinois Central, the Indianapolis and St. Louis, the Springfield and Illinois South-eastern, and the St. Louis division of the Toledo, Wabash, and Western railroads; 675 sq.m.; pop. '70, 20,363. It is generally level timber-land and prairie; productions agricultural. Co. seat, Taylorsville.

CHRISTIAN, a co. in s.w. Kentucky, on the Tennessee border, intersected by the Evansville, Henderson and Nashville railroad; 704 sq.m., pop. '70, 23,227-2,112.

colored. It is hilly in the n., but level in the s., with productive soil; the products are wheat, corn, hay, butter, wool, and tobacco. Co. seat, Hopkinsville.

CHRISTIAN, a co. in s.w. Missouri, drained by James river, and intersected by the Atlantic and Pacific railroad; 500 sq.m.; pop. '70, 6,707—114 colored. The surface is hilly, and the soil in the valleys is rich, producing wheat, corn, tobacco, etc. Timber abounds. Co. seat, Ozark.

CHRISTIAN VIII., 1786-1848; king of Denmark, nephew of Christian VII. When Norway was ceded to Sweden by the treaty of Kiel, the people of the former country repudiated the transfer, and C. was then made governor, raised an army and convened a diet, at which a constitution was framed, and he was elected, May 29, 1814, king of Norway under the title of Christian I., but the allied powers compelled him to relinquish the throne on the 10th of Oct. On the death of Frederick VI., Dec. 3, 1839, he became king of Denmark. He tried to unite Schleswig and a part of Holstein to Denmark, but did not succeed. He died just before the beginning of the revolution of 1848.

CHRISTIAN COMMISSION, THE UNITED STATES, an important organization in the loyal states during the war of the rebellion, to aid and co-operate with the sanitary commission, and generally to assist in the cause of the union. Its purpose was to supply material wants and comforts for the army, especially to the sick or wounded. It gave also an unsectarian religious help. Like the sanitary commission, it accomplished a vast amount of valuable work. The C. C. was originated by a call from the Young Men's Christian association of New York. It is noticeable as one of the earliest signs, as well as causes, of the growing charity among different denominations so marked in recent years.

CHRISTIAN CONNECTION (*ante*), an organization of American Christians drawn mostly from the Baptist, Methodist, and Presbyterian churches in various parts of the United States. The earliest organizations were "Republican Methodists," seceders from the Methodist church in 1793, who took the name of "Christians." In 1800, there was a secession from the Baptist churches in Vermont, which soon grew to considerable importance. Nearly at the same period there was a secession from the Presbyterian church in Tennessee and Kentucky, and a separate synod was formed. These three organizations finally merged in one body, and adopted the common name of "Christians." Each congregation is independent, and they take the Bible as their standard of doctrine. They hold that the Scriptures are inspired, and are of divine authority; that every man has the right to interpret the Bible for himself, and that therefore differences of theological views are no bar to church fellowship; that there is one God, but the doctrine of the Trinity is not generally received; that Christ is a divine being, that he pre-existed, and is the mediator between God and man; that the sufferings of Christ atone for the sins of all men, who, by repentance and faith, may be saved; that immersion is the only proper form of baptism, and believers the only proper subjects for that ordinance; that communion at the Lord's table is open to believers of all denominations. In government and usage they are congregational, each church being independent, although there are annual or state conferences which receive and ordain pastors, but can pass no laws that will be actually binding on the several churches. They have an American Christian convention, which has a regular constitution, officers, and departments. Among their institutions of learning are Hesperia and Pierce Christian colleges in California; Eureka college in Illinois; Bedford college, Butler university, and Union Christian college in Indiana; Oskaloosa college in Iowa; Eminence college and Kentucky university in Kentucky; Christian university in Missouri; Christian college in Oregon; and Bethany college in West Virginia, besides a number of theological seminaries and academies. Antioch college in Ohio, though not officially known as belonging to this connection, has had much favor in the denomination.

CHRISTIAN ERA, sometimes called the era of the incarnation, is now almost universally employed in Christian countries, and is used by some eastern nations. Its epoch, or commencement, is the 1st of Jan. in the fourth year of the 194th olympiad, the 753d year from the foundation of Rome, and the 4,714th of the Julian period. It is usually supposed to begin with the year of the birth of Christ, but there are various opinions with regard to the year in which that event took place. The general opinion seems to be that Christ was born four years earlier than the dates now used imply. The C. E. was introduced into Italy in the 6th c., and began to be used in Gaul in the 8th c., though not generally used in England before the close of the 8th century. Before its introduction the usual practice in Latin countries was to distinguish the years by their number in the indiction. In the C. E. the years are distinguished by Arabic numerals, those before the birth of Christ being marked *b.c.* (before Christ), or *A.C.* (*ante Christum*); and those after Christ *A.D.* (*anno Domini*, in the year of our Lord). There is difficulty in determining the years before Christ, since astronomers reckon the year preceding our era as the year 0 *b.c.*, while chronologers call it 1 *b.c.* The latter seems to be correct, and by that method the leap years before Christ fall on the years 1, 5, 9, 13, etc., while those after Christ fall upon 4, 8, 12, etc. Dates of the C. E. are greatly confused by variations of time for the beginning of the year.

Dionysius, who was the author of the C. E., began the first year on the 25th of Mar., or on the day of the Annunciation to the virgin Mary, 9 months before the birth of Christ. By this calculation the C. E. began 9 months and 7 days before our year 1, which began on the 1st of January. This beginning the year on the 25th of Mar. was the practice in most Italian states as late (in Pisa) as 1745. It was adopted in some papal documents, and it was employed in France about the middle of the 11th century. In some instances the year was counted from the 25th of Mar. following our epoch, which would be 2 months and 24 days after our beginning of the era. A few writers of the 6th and 7th centuries began the year on the 1st of January. In France, the practice as late as the middle of the 16th c. was to begin the year with Easter; but in 1663 Charles IX. directed that thereafter the year should commence on the 1st of January. In Germany, about the 11th c., it was usual to begin the year with Christmas, and this practice prevailed at Milan, Rome, and other Italian cities in the 13th, 14th, and 15th centuries. In England, the practice of beginning the year at Christmas was introduced in the 7th c., and traces of it are found down to the 13th century. Gervase of Canterbury mentions that most writers of his country agreed in regarding Christmas as the first day of the year, because it formed the term at which the sun finished and recommenced his annual course. This is a remnant of the old Norse religion. In the severely cold regions of Scandinavia the return of the sun from its extreme southern declination was hailed with great rejoicing; the great yule festival was held, and offerings and thanksgiving marked the period. This was, of course, at the winter solstice, in early ages very nearly on the day of Christmas. When Anschar and other Roman Catholic missionaries penetrated to Denmark, they engrafted upon the heathen yule the Christian Christmas, and for the return of the material sun they taught the rising of the son of God. Thus, the church Christmas may be the successor not only of the Roman saturnalia, but of the Odinic yule. The memory of the latter is still strong among the rural population of England. In England, in the 12th c., the practice prevailed of beginning the year on the Annunciation, the 25th of Mar., and that was the general practice until the reformation of the calendar, in 1751, by a parliamentary law, which directed that the year 1752 should be reckoned from the 1st of Jan., thus leaving 1751 nearly three months short. English authors, however, have endeavored to make the beginning of the historical year on the 1st of January. The liturgic year of the church of England began with the first Sunday in Advent, the Lord's day before Christmas. These variations in the commencement of the year lead to much confusion in dates. The English revolution is popularly called the revolution of 1688; but if we reckon from the 1st of Jan., it began in 1689. In the tables of modern works on chronology, the birth of Christ is placed in the year 4 before Christ. Some recent chronologers of eminence place the Nativity nearer the Christian era. Eusebius dates the crucifixion in the year 33 A.D.; but Augustine, Origen, and others, place it in the year 29 A.D. In either case, the long-established date of the commencement of the C. E. is not altered. See CHRONOLOGY.

CHRISTIANIA, a province in s. Norway; about 10,000 sq. m.; pop. '76, 489,915. It is a rough, mountainous region containing many lakes, and is traversed by the Glommer, the Drammen, and other rivers. The mineral products are copper, silver, and iron. Agriculture is scarcely profitable, though cattle and horses are raised in large numbers. The chief article of export is lumber.

CHRISTIANS OF ST. JOHN, or **NAZAREANS**, a sect in Persia, in the country around Bassorah. They seemingly deify John the Baptist and consider Jesus an impostor. They say that they dwelt on the Jordan in the time of Jesus, but were driven from Palestine by the Mohammedans. Their name "Christians" is wholly a misnomer. They consider the Jehovah of the Jews a spurious divinity, and Christ a false teacher; that the world was created by seven angels of darkness who inhabit the seven planets, and there is also a kingdom of light superintended by good angels. Behind these kingdoms is a region of splendor, and there is the supreme original being, Ferha, and the female principle, Ajar. There are conflicts between the worlds of darkness and of light, but light is to triumph. The Mosaic and Christian systems of religion came from the region of darkness; but that of John the Baptist from the region of light. Baptism is the means of introducing men to the kingdom of light. John was married, but his children sprang from the Jordan. These people practice polygamy, and forbid mourning for the dead. They have five sacred books, of which four are doctrinal, and one treats of astrology. It is supposed that, 200 years ago, they numbered about 100,000.

CHRISTIANS OF ST. THOMAS, the name of a branch of an old Persian church still existing on the Malabar coast, formed originally by excommunicated Nestorians. Their liturgy is in the Syriac language. They still celebrate the early agape or love-feast, use bread, salt, and oil in the communion of the supper, and anoint infants in baptism. Their priests are allowed to marry. While the Portuguese held Malabar they were submissive to the Roman Catholic church, but as soon as the Dutch took control the Nestorian system was resumed.

CHRISTIANSUND, a seaport on the w. coast of Norway, 85 m. w.s.w. of Trondhjem, in 63° 3' n., and 7° 40' e.; pop. 5,709. The town is built on three small islands by which its harbor is inclosed. The chief exports are fish and fish products.

CHRISTIAN UNION CHURCHES, an organization projected at Columbus, Ohio, in 1855, and supposed to have 30,000 to 40,000 members, principally in the western and south-western states. Their leading doctrines, as stated in their publications, are: the oneness of the church, with Christ the only head, and the Bible the only rule of faith and practice; the good works of a Christian life the only condition of fellowship; the suppression of controversy; local or congregational church government; no preaching of party politics. They adopt the motto, "In things essential, unity; in non-essentials, liberty; in all things, charity." Baptism is a condition of membership, but in communion they are practically unrestricted.

CHRISTINOS, a political party in Spain during the regency of queen Christina, who were opposed to the Carlists.

CHRISTLIEB, THEODOR, D.D., b. 1833; a native of Wurtemberg; educated at Tubingen, a teacher in France, a preacher in London, and an author of lectures on *Modern Doubt and Christian Belief*. He returned to Germany in 1865, and was made professor of theology at Bonn. In 1873, he was a delegate to the evangelical alliance, meeting that year in New York. At its sessions his addresses excited great interest.

CHRISTOPULUS, ATHANASIOS, 1772-1847; a Greek poet, the son of a Wallachian priest. He studied at Buda and Padua, and became teacher in the family of the Wallachian prince Mourousi, and, after the fall of that prince, he assisted the hospodar Caradja in drawing up a code of laws for the nation. He wrote love ditties and drinking songs, which are very popular among the Greeks. He is also the author of a tragedy, and some philological works.

CHROMIC ACID, composed of trioxide of chromium and water; formula, CrO_4H_2 . It forms coloring pigments, such as chromate of lead, and chromate and bichromate of potash; and is used as a caustic in surgery.

CHROMIC IRON, or CHROMITE, ore of chromium, found in Maryland, Pennsylvania, the Shetland islands, Scotland, France, and other places. It usually occurs in mass, but is sometimes crystallized in octahedrons. Oxides of chromium and iron are its ingredients.

CHRONICLES, the name of two of the books of the Old Testament, as found in the common English Bible. In the Hebrew canon the C. form but one book, which is entitled *Events of the Times*—and this appears to have been a designation commonly applied to special histories—in more definite shape, *Events of the Times of King David*, or the like. The Greek translators divided the long Hebrew book into two, and adopted the title *Things Omitted*, that is, not recorded in the other historical books. Jerome suggested the title *Chronicon*, whence comes the English name. The book of C. begins with Adam and ends abruptly in the middle of Cyrus's decree of restoration. The continuation of the narrative is found in the book of Ezra, which fills up the fragment of the decree of the Persian king. Of the authorship of C. nothing is known except what can be determined by internal evidence. The language implies that the book is one of the latest of the Old Testament. In the Hebrew Bible it is placed last. As to the time of the writing of C., it is argued that the chronicler wrote after the fall of the Persian monarchy. What seems to be certain and important for a right estimate of the book is that the author lived a considerable time after Ezra, and stood entirely under the influence of the religious institutions of the new theocracy. This point of view determined the nature of his interest in the early history of his people. The true importance of Hebrew history had always centered in the fact that this petty nation was the people of Jehovah, the spiritual God. The tragic interest which distinguishes the annals of Israel from the forgotten history of Moab or Damascus lies wholly in that long contest which finally vindicated the reality of spiritual things and the supremacy of Jehovah's purpose, in the political ruin of the nation which was the faithless depositary of these sacred truths. After the captivity, it was impossible to write the history of Israel's fortunes otherwise than in a spirit of religious pragmatism. But within the limits of the religious conception of the plan and purpose of the Hebrew history more than one point of view might be taken. The book of Kings looks upon history in the spirit of the prophets. But before the chronicler wrote, the last spark of prophecy had become extinct. The Jerusalem of Ezra was organized no longer as a nation, but as a municipality and a church. The center of religious life was no longer the prophetic word, but the ordinances of the Pentateuch and the liturgical service of the sanctuary. The religious vocation of Israel was no longer national, but ecclesiastical and municipal; and the historical continuity of the nation was vividly redized only within the walls of Jerusalem and the courts of the temple, in the solemn assembly and stately ceremonial of a feast day. These influences naturally operated most strongly on those who were officially attached to the sanctuary. To a Levite, even more than to other Jews, the history of Israel meant above all things the history of Jerusalem, of the temple, and of the temple ordinances. The author of C. betrays in every page his essentially Levitical habit of mind. To such a mind, in the fallen condition of the Jews as a political nation, there seemed to be room for a new history, which should confine itself to matters still interesting to the theocracy of Zion, keeping Jerusalem and the temple in the foreground, and developing the divine signifi-

cance of the history in its causes and results, not so much with reference to the prophetic word as to the fixed legislation of the Pentateuch, so that the whole narrative might be made to teach that the glory of Israel lies in the observance of the divine law and ritual. For the sake of systematic completeness, the author of the C. begins with Adam; but he had nothing to add to the Pentateuch, and the period from Moses to David contained little that served his purpose. He therefore contracted the early history into a series of genealogies, which were by no means the least interesting part of his work at a time when every Israelite was concerned to prove the purity of his Hebrew descent. From the death of Saul the history becomes fuller, and runs parallel with the books of Samuel and Kings. The limitations of the author's interest in past times appear in the omission, among other particulars, of David's reign in Hebron, of the disorders in his family and the revolt of Absalom, of the circumstances of Solomon's accession, and of many details as to the wisdom and splendor of that sovereign, as well as of his fall into idolatry. In the latter history the ten tribes are quite neglected, and political affairs in Judah receive attention, not in proportion to their intrinsic importance, but according as they serve to exemplify God's help to the obedient and his chastisement of the rebellious. That the author is always unwilling to speak of the misfortunes of good rulers, is not to be ascribed to a desire to suppress the truth, but shows that the book was throughout composed not in purely historical interest, but with a view to inculcate a practical lesson. The more important additions which the chronicler makes to the old narrative consist partly of full details of points connected with the history of the sanctuary and the great feasts, or the archaeology of the Levitical ministry, and partly of narratives of victories and defeats, of sins and punishments, of obedience and its reward, which could be made to point a plain religious lesson in favor of faithful observance of the law. The minor variations of C. from the books of Samuel and Kings are analogous to the larger additions and omissions, so that the whole work has a consistent and well-marked character, presenting the history in quite a different perspective from that of the old narrative. An immense amount of criticism has been expended upon C.; but after all it is safe to conclude, with Ewald and other careful critics, that there is no foundation for the charge that the chronicler invented history in the interest of his practical purpose of exhortation and encouragement. But it is not to be doubted that in shaping his narrative he allowed himself the same freedom taken by other ancient historians, and even by copyists. [Portions of this article are, with modifications, from *Encyclopædia Britannica*, ninth edition.]

CHRONOLOGY (*ante*), a fixed period from which dates are reckoned. The Christian era (q.v.) starts at the birth of Christ. The years before are marked B.C. and these after, A.D. (Anno Domini). This era is now almost universally accepted. The olympiad was a Greek era in periods of five years; the birth of Christ occurred in the middle of the fourth (some say in the second or third) year of the 194th Olympiad. The era of the foundation of Rome is usually assigned to 753 B.C. The era of the creation is fixed at many widely varying points. The reckoning of Constantinople, which is still used by the Greek church, makes it 5509 B.C.; the Abyssinian church, 5492; the Alexandrian church, 5502, and later 5492; the Jews, 3761. One writer on the C. of sacred history collected more than 200 different estimates of the era of the creation, the shortest being 3483, and the longest (984 B.C. If such or such a date from the creation means anything, it is probably to be read by the period fixed by Dr. Usher, which was 4004 B.C. Yet it must be understood that, on this point, we are without the data for an accurate and positive chronology. There is an era of the creation used in India, which is only 3102 B.C. The era of Vicramyditya in common use in India begins 56 B.C. The Spanish era, dating from the conquest of Spain by Augustus, 88 B.C., was in use in Spain, Portugal, North Africa, and Southern France. The era of Diocleian, or of the martyrs, is dated 284 A.D. The Mohammedan era, beginning at the time of the prophet's flight to Medina, is 622 A.D. As reckoned by our ordinary C., the precise dates of commencing the above and other eras are:

Grecian Mundane.....	Sept. 1,	5508	B.C.
Constantinople, Civil.....	Sept. 1,	5508	"
Alexandrian.....	Aug. 29,	5502	"
Antioch, Ecclesiastical.....	Sept. 1,	5492	"
Julian Period.....	Jan. 1,	4713	"
Mundane, Usher.....	Oct.	4008	"
Mundane, Jewish.....	Oct.	3761	"
Abraham.....	Oct. 1,	2015	"
Olympiads ..	July 1,	776	"
Rome, foundation of.....	April 24,	753	"
Nabonassar	Feb. 26,	747	"
Metonic Cycle.....	July 15,	423	"
Macedonian, or Grecian....	Sept. 1,	312	"
Tyrian.....	Oct. 19,	125	"
Sidonian.....	Oct.	110	"
Cæsarian, of Antioch.....	Sept. 1,	48	"

Julian Year.....	Jan. 1,	45 B.C.
Spanish Era.....	Jan. 1,	38 "
Actian.....	Jan. 1,	30 "
Augustan.....	Feb. 14,	27 "
Usual Christian (ours).....	Jan. 1,	1 "
Destruction of Jerusalem.....	Sept. 1,	69 "
Era of Maccabees.....	Nov. 24,	166 "
Era of Diocletian.....	Sept. 17,	284 "
Era of Ascension.....	Nov. 12,	295 "
Armenian.....	July 7,	552 "
Mohammedan, Hegira.....	July 16,	622 "
Persian of Yezdegird.....	June 16,	632 "

CHYZANOWSKI, ADALBERT, 1788-1861; a native of Poland, who participated in Napoleon's Russian campaign, in the engagements at Leipsic, Paris, and Waterloo. After Napoleon's final defeat he served in the Russo-Polish army, and was under Diebitsch in Turkey in 1829. In the Polish revolution of 1830 he served with distinction, rose to the rank of gen. of division, and was made governor of Warsaw. He fell under suspicion of friendship to the Russians, and was from time to time under a sort of ostracism. In 1849, he was chosen by Charles Albert commander-in-chief of the Sardinian forces in the short-lived revolution of that period. Ramorino and C. were charged with treachery, and the former was put to death. Some years later C. emigrated to the United States, and died in Louisiana.

CHUND, or CHAND, a Hindu writer of the 12th c., court poet to the last of the Hindu sovereigns of Delhi. He wrote in verse an immense encyclopædic work, including a history, and especially an account of the exploits of the author and of his master.

CHUPRA, a t. in India, in the province of Behar, Bengal, on the n. bank of the Ganges, 35 m. n.w. of Patna. It extends nearly a mile along the river, and has several pagodas, mosques, and churches. There is trade in cotton, sugar, and saltpeter. Pop. about 30,000.

CHURCH, ALBERT E., LL.D., 1807-78; b. Conn.; graduated at West Point in 1828. He became professor of mathematics in the U. S. military academy in 1838, and published *Elements of Differential and Integral Calculus*; *Elements of Analytical Geometry*; *Elements of Analytical Trigonometry*; and *Elements of Descriptive Geometry, with its application to Spherical Projections, Shades and Shadows, Perspective and Geometric Projections*.

CHURCH, BENJAMIN, 1639-1718; a New England soldier who served with distinction in king Philip's wars, and was commander in the fight in which Philip was killed. He commanded a number of expeditions against the Indians of New Hampshire and Maine. From his dictation and memoranda his son wrote a history of king Philip's war.

CHURCH, FREDERICK EDWIN, b. Conn., 1826; a pupil of Thomas Cole, and a painter of eminence. The works which gave him prominence are a "View of East Rock, near New Haven," and "Scenes in the Catskill Mountains." He visited South America in 1853 and 1857; and in Ecuador and New Granada made sketches for a number of paintings, some of which have attained great celebrity, such as the "Heart of the Andes," "On the Cordilleras," and "Cotopaxi." Another celebrated work is the "Horse-shoe Fall, Niagara." He visited Jamaica, and afterwards Europe and the Holy Land. Some of his other works are "Damascus," "Jerusalem," "The Parthenon," and "Tropical Scenery."

CHURCH, JOHN HUBBARD, D.D., 1772-1840; a graduate of Harvard in 1797, and for nearly 40 years pastor of a Congregational church in Pelham, N. H. He held various offices in Dartmouth college, Andover theological seminary, and Phillips academy, and was prominent in Bible, tract, and missionary societies.

CHURCH, sir RICHARD, 1780-1873; an Englishman, who held the principal command in the Greek war of independence. On the final establishment of the kingdom of Greece he was made a councillor of state, and afterwards a member of the senate; and was for many years at the head of the army and navy.

CHURCH, SANFORD E., LL.D., 1815-80; b. N. Y.; bred to the law, in which he speedily rose to a prominent position. In 1850, he was elected lieut. gov. of New York, and was re-elected in 1852; in 1857, he was elected comptroller, but twice afterwards defeated for the same office. In 1870, he was elected chief justice of the court of appeals, which position he held until his death.

CHURCH CALENDAR, a table of the order and series of days, weeks, months, and holy days in the year. The name is derived from *calendæ*, or first days of the Roman month. The earliest now existing which contains the Christian festivals is that of Sylvius, 448 A. D. A fragment of a Gothic calendar remains, which probably belongs to the 4th century. The name is applied also to the *fasti* or catalogues for particular churches, of the saints most honored by them, such as bishops, martyrs, etc. At the reformation the German Lutheran church retained the Roman calendar. In 1850, a

calendar was published for the evangelical church of Germany. It has been continued annually, and contains much interesting information, in addition to the table of feasts, fasts, etc. The full calendar of the church of England contains 9 columns, giving the golden number, days of the month, the dominical or Sunday letter, the calends, nodes and ides, the daily Scripture lessons, and the holy days of the church, together with some of the Roman festivals which have been retained, not as having any religious value, but because the practice of the courts, the habits of tradesmen, and the times of popular amusements had become interwoven with them. The calendar of the Protestant Episcopal church in the United States retains only the festivals which are referable to a Scriptural origin.

CHURCH CONGRESS, the name of free gatherings of ministers and laymen of the established church of England, annually convened for the discussion of ecclesiastical and religious questions. The first church congress was held in 1861 in Canterbury, and in the following years successively in Oxford, Manchester, Bristol, York, etc. The attendance is usually very large, and comprises many bishops and lower dignitaries. Full reports of the proceedings of each session are published. Such meetings, having the advantage of free interchange of views, but with no claim to ecclesiastical authority, have been found very profitable in this country; and though in the Protestant Episcopal church the sentiment in their favor has not been unanimous, they are winning for themselves an established position through either enthusiastic advocacy or silent consent.

CHURCH DIET, the free gathering of ministers and lay members of German Protestant churches. Such meetings arose in consequence of the revolutionary movements of 1848, which threatened to endanger the influence of the evangelical church upon society. Members of the Lutheran, Reformed, the United Evangelical, with the high church "confessionals" participated in the earlier meetings; but after 1860 only the evangelical parties were represented. Annual reports are published.

CHURCHILL, a co. in w. central Nevada, intersected in the n. part by the Central Pacific railroad; 5,800 sq.m.; pop. '70, 196. It is watered by the Humboldt, Carson, Walker, and other rivers. Among the minerals are gold, silver, salt, soda, etc. Co. seat, Stillwater.

CHURCHILL, JOHN. See **MARLBOROUGH**, *ante*.

CHURCHILL, MISSINNIPPI, or **ENGLISH RIVER**, in British North America, rising in Methy lake, and running s.e. through Buffalo and La Crosse lakes, to Hudson's bay; length about 700 miles.

CHURCH OF ENGLAND. See **ENGLAND, CHURCH OF**, *ante*.

CHURCH OF GOD. See **WINEBRENNERIANS**.

CHURCH OF SCOTLAND. See **SCOTLAND, CHURCH OF**, *ante*.

CHURCH OF SCOTLAND, FREE. See **FREE CHURCH OF SCOTLAND**, *ante*.

CHURUBUSCO, a village 6 m. s. of the city of Mexico, on the river Churubusco, connected with the capital by an elevated paved causeway. In the village is the large convent of San Pablo. In the war between the United States and Mexico, Santa Anna made a stand here, Aug. 20, 1847, but the Americans under gen. Scott were victorious after a sharp action. On the same day occurred the battle of Contreras, and three weeks after that of Chapultepec, and the capture of the Mexican capital.

CHUTIA, or **ЧЮТА, NÁGPUR**, a division of British India under the lieutenant-governor of Bengal, comprising the districts of Hazáribágh, Lohárdágá, Mánbhúm, and Sinhbhúm, and the seven tributary states which constitute the south-west frontier agency, between 21° and 25° n., and 82° and 87° e.; 43,901 sq.m.; pop. '72, 3,825,571, residing in 25,766 villages and 725,287 houses. The people consist of 2,567,292 Hindus, 169,006 Mohammedans, 15,798 Christians, and 1,703,475 of no religion specified. The last-named class consists mostly of remnants of tribes driven from the plains by the Hindus. There are in the division only six towns of more than 5,000 inhabitants. The chief productions are rice, corn, pulse, potatoes, and oil-seeds. A little tea is grown in two of the districts. The climate is dry and healthy.

CHUTIA, or ЧЮТА, NÁGPUR TRIBUTARY STATES (of India), seven in number, viz.: Sirguja, Udaipur, Jashpur, Gangpur, Bonái, Koriá, and Chang Bhakár, now under the political superintendence of the commissioner of Chutiá Nagpur, and forming the south-west frontier agency. The states are mountainous, thinly cultivated, and inhabited for the most part by wild aboriginal tribes, area, 15,419 sq.m.; pop. '72, 405,980. There are no towns, and only three villages of more than 1,000 inhabitants.

CHWALYNSK, a t. of Russia on the Volga; pop., 14,262. It is a river port, and has important manufactures.

CHYTRÆUS, DAVID, 1530-1600; an eminent Lutheran theologian. He studied at Tübingen and Wittenberg, and was a pupil of Melancthon. His learning and talents gave him high position, and he was employed by Maximilian II. to arrange ecclesiastical affairs in Austria. He was principal author of the statutes of Helmstadt, and one of the authors of the *Formula of Concord*. He left a number of important theological works.

CIBAO, a range of mountains in the middle of the island of Hayti, about 90 m. long, and having summits more than 7,000 ft. high. Gold has been found in these mountains.

CIBBER, CARUS GABRIEL, 1630-1700; a sculptor, b. in Holstein, who was engaged to execute the *bassi relievi* on the pedestal of the London monument, to commemorate the great fire of 1666. He made also the two figures representing "Madness" which once adorned the gate of the old Bethlehem hospital. He built the Danish church in London at his own expense.

CIBBER, SUSANNAH MARIA, 1716-66; wife of Theophilus, and daughter-in-law of the dramatist Colley Cibber. Dr. Arne was her instructor in music, in which first she appeared publicly; but after her marriage she preferred tragedy. She is the actress of whom Garrick exclaimed, on hearing of her death, "Then tragedy has expired with her!"

CIBORIUM, a chalice, pyx, or cup, usually of gold or silver, with a cover surmounted by a cross. It is used in the Roman Catholic service to contain the host, or consecrated wafer, in the service of the mass. Ciborium is also the name of a canopy on the altar, supported by four columns, to which the cup, in the shape of a dove, was attached by chains. This especial cup contained the wafer for the communion of the sick.

CICOGNARA, LEOPOLDO, Count da, 1767-1834; an archæologist and art-critic of Ferrara. He visited all the noted cities of southern Europe, studying them with the eye of an archæologist and connoisseur. Napoleon found him engaged in politics and a member of the legislative body of Modena. In 1808, C. was made president of the academy of fine arts in Venice. In 1813-18, he produced his great work on the history of art, designed to complete the labors of Winckelmann and d'Agincourt. He published many other elaborately illustrated works.

CIENFUEGOS, a city in Cuba, on the s. coast of the island, on the bay of Jagua, 120 m. s.e. of Havana; pop. 9,950. It has a good harbor, and is one of the best built cities in the island. Railroads give communication with Cardenas and other towns on the n. coast. C. was founded in 1813 by a captain-general of that name.

CIMICIFUGA, or BUGBANE, an herb of the order *ranunculaceæ*. It is the black snake-root found in all the northern states, and much used in rural districts as a medicine, chiefly in the form of a decoction. It is believed to be useful in nervous diseases, rheumatism, and bronchitis.

CINALOA. See SINALOA.

CINCINNATI (*ante*), the chief city of Ohio, covers an area of 24 sq.m., and is laid out upon a plan substantially like that of Philadelphia, the long streets and avenues, mostly 66 ft. or more in breadth, being generally well paved or macadamized, and some of them adorned with shade-trees. The buildings are mostly of brick, and very substantial. Some of the streets leading back from the river towards the high hills on the w. are of a steep grade. The summits of these hills, which have been made accessible, command highly picturesque views of the surrounding country, including a wide sweep of the territory on the other side of the river, in Kentucky. The main portion of the city lies between Deer creek on the e. and Mill creek on the w., these two streams entering the Ohio at a distance from each other of 2½ miles. The hillsides between the creeks, n. of East Liberty street and Hamilton road, are terraced with streets to the summits, and covered with dwellings. On some of the western hills are vineyards and gardens. The suburban portions of the city in various directions are very attractive, being filled with elegant and costly private residences, surrounded by trees and shrubbery and cultivated lawns, with picturesquely winding paths. There are beautiful drives in various directions, the roads being fine and the scenery of a very attractive character. The city is well provided with parks and public grounds. Eden park, on a hill in the eastern district, commands a fine prospect. It contains 216 acres. Lincoln, Washington, Hopkins, and City parks near the center of the city, are beautiful, though small. Burnet woods contains 170 acres, nearly all forest. Spring Grove, a beautiful cemetery, is 3 m. n.w. of the city, in the valley of Mill creek. It is approached by an avenue 100 ft. wide, and contains 600 acres of land tastefully laid out, and has a large number of costly monuments, among which are the Dexter mausoleum, and a bronze statue commemorating the suppression of the rebellion of 1861. The most noteworthy work of art in the city is the Tyler Davidson fountain, in Fifth street between Vine and Walnut, which was cast at the royal foundry in Munich, and which cost \$200,000. It was suggested by Mr. Tyler Davidson, after whose death it was completed and presented to the city by Mr. Henry Probasco in 1871. Standing in a conspicuous place, it is an object of perpetual interest to citizens and strangers. During the warm days of summer, from early morning till midnight, its flowing jets make their welcome music, and impart a refreshing coolness to the air. The suspension bridge across the Ohio, connecting Cincinnati with the Kentucky shore at Covington, was designed by John A. Roebling, and completed in 1867 at a cost of \$1,800,000. Another bridge, of wrought iron and resting upon piers, connects the city with Newport, Ky., and is used for both railroad and ordinary travel. Many of the public buildings of Cincinnati are distin-

guished for architectural beauty. The U. S. government building, containing the post-office, custom-house, court-rooms, and various offices, presents a front of 150 ft. on Vine street, and 80 ft. on Fourth street. It is of sawed freestone, three stories high, in the Roman Corinthian style. The county court-house is a square of three stories, and nearly fire-proof. Its cost was \$500,000. With the county jail in its rear it occupies a whole square. The buildings for the use of the city government are less imposing, though well adapted to their purpose. The city hospital, consisting of eight distinct buildings arranged around a central court, occupies a square of nearly four acres. It cost over \$700,000, exclusive of the ground, which is worth \$300,000 more. It has accommodations for 700 patients. The public library, built of brick in the Romanesque style, with funds raised by taxation, cost about \$675,000. Masonic hall, in the Byzantine style, 195 by 160 ft., and four stories high, is a very imposing edifice. Pike's opera-house also is of grand dimensions, with a front of 134 ft. and a depth of 170 feet. Mozart hall is a massive edifice, with an auditorium seating 3,000 people. St. Xavier's college is a splendid building, in the Romanesque style. The city work-house, 515 ft. long, has cells for 700 prisoners, with workshops and grounds for their employment. Longview asylum for the insane, at Carthage, 10 m. from the city, is of brick in the Italian style, 612 ft. long and four stories in height. The value of the buildings and grounds is \$1,000,000. St. Peter's cathedral (Roman Catholic) is the finest church edifice in the city. It is 180 ft. long and 60 and 90 ft. deep, in the pure Grecian style, with a stone spire 234 ft. high. The number of churches in Cincinnati exceeds 150, of which upwards of 40 are Roman Catholic, the rest being divided among a large number of Protestant sects. The public library contains 60,000 volumes, the young men's mercantile library 27,000, and the historical library 18,000 and many valuable MSS. There are in the city five literary colleges, six medical colleges, one law school, one college of dentistry, five commercial colleges, and a university. The common schools, about 30 in number, are well organized and managed. The Woodward and Hughes high schools have a high reputation for efficiency. The Roman Catholics support over 100 parochial schools. The Wesleyan college for women, established here in 1843, has preparatory, academic, and collegiate departments, and a department of music and art. St. Xavier's college, administered by the Jesuits, affords instruction to many students. Lane theological seminary, on Walnut hills, a Presbyterian institution, was organized in 1829, with an endowment of \$200,000. Cincinnati is the center of a vast network of railroads, by means of which it is in direct and easy communication with every portion of the country. It is connected with lake Erie by the Miami canal, and the Ohio river opens for it a channel of intercourse with a vast region, rapidly increasing in population and commerce. It is well supplied with daily and weekly papers and other periodicals, and is the center of a vast and various manufacturing industry and a widely extended commerce. Pop. in '80, 255,804. The city was founded in 1789 by settlers from New Jersey. Hostile Indians at that time rendered the navigation of the Ohio difficult and dangerous, and its progress for many years was slow. After the introduction of steam it grew rapidly. Though saved from the mroads of slavery by the ordinance of 1787, its proximity to, and its social and commercial relations with, the slave states, induced among its inhabitants an inveterate opposition to every scheme of emancipation. From 1831 to 1838, the public discussion of slavery there was hardly less odious and dangerous than it was in New Orleans and Richmond. Two or three times an anti-slavery press established there by James G. Birney was destroyed by a mob, with the open and avowed sanction of eminent citizens and the connivance of the city government. The excuse urged for these outrages was that C. depended for her prosperity largely upon her trade with the slave states, and that this trade would not be retained if an anti-slavery journal were tolerated. The city was a rendezvous and a thoroughfare for fugitive slaves on their flight to Canada, and thus served to keep the people in a state of constant fermentation. Levi Coffin, a Quaker citizen of the place, who lately died at an advanced age, was proud to declare that he had harbored no less than 3,000 of these fugitives, not one of whom failed to make good his escape. A large proportion of the population, moreover, were natives of the south, and therefore in natural sympathy with the region whence they had emigrated. So strong was this sympathy in 1862, when an attack by a confederate force was expected, that it was deemed necessary to put the city under martial law. These memories, however unpleasant, are a part of the history of a period now happily passed away.

CINCINNATI, SOCIETY OF THE (*ante*). At the second general meeting, in 1787, Washington was elected president-general, and was re-elected every third year during his life. His successors in office were Alexander Hamilton and the Pinckneys; and when Lafayette visited the country in 1824, he was its only surviving maj.gen. The last survivor of the original association was Robert Burnet, of New York, who died in 1854. The society now exists but in four or five states. Hamilton Fish, ex-secretary of state, is the presiding officer, and the largest gatherings are at the annual meetings in New York city. Nearly all the prominent generals in the U. S. army have been or are now members of the society. It has been thought or charged that the society has some political partisan significance or inclination, but this is not the fact. The Tam-

many society, which is aggressively partisan, was started to oppose the society of the Cincinnati, because the latter was supposed to be established in the interest of the wealthier and more aristocratic classes.

CINEAS, the chief adviser of Pyrrhus, king of Epirus. His most famous work was in visiting Rome, to arrange for peace, after the defeat of the Romans in 280 B.C. In Rome, he learned in a single day the name of every man of importance in the city. He was not successful in securing peace, and when he returned he told Pyrrhus that Rome was a temple and its senate an assembly of kings.

CIO'NE, ANDREA DI. See ORCAGNA.

CIRCAR, an Indian term applied to the component parts of a province, each of which is administered by a deputy governor. In English, it is principally employed in the name of the Northern Circars, used to designate a now obsolete division of the Madras presidency, which consisted of a narrow slip of territory lying along the w. side of the bay of Bengal, from 15° 40' to 20° 17' north. These Northern Circars were Cicacole, Rajahmundry, Ellore, Condapilly, and Guntoor, in all 30,000 sq. miles.

CIRCE'II, a t. of ancient Italy, in Litiu m, at the foot of Mons Circeius, a short distance from the sea, 10 or 12 m. from Terracina. Its ruins are still visible on the Montedella Cittadella, and consist of walls and gateways, built of polygonal blocks.

CIRCENSIAN GAMES. See CIRCUS, *ante*.

CIRCLEVILLE, a city in Pickaway co., Ohio, on the Scioto river, and the Cincinnati and Muskingum Valley railroad, and the Ohio canal; pop. '70, 5,407. It was built on the site of an old Indian fortification of circular form, from which comes the name. The city has many mills and manufactories.

CIRCUIT COURT, in American jurisprudence, a court whose jurisdiction extends over a number of counties or districts, and which holds its sittings in various places within the jurisdiction. More definitely, a class of federal courts of which the terms are held in two or more places successively in the various circuits into which the whole union is divided. They are presided over by the chief-justice of the United States, or one of the associate judges, or by a special circuit justice, or in some cases by a district judge. The C. C. has jurisdiction in law and equity, direct and appellate; hears appeals in admiralty, and in some instances in criminal cases. The systems respecting circuit courts in the several states differ considerably. In the classification of English courts no such title is known.

CIRCULATING MEDIUM. See MONEY, *ante*.

CIRCUMCELLIO'NES, fanatical Donatists of the 4th c., who got their name from their habits of wandering. They rambled over the country, plundering, burning houses, and murdering those who made resistance, saying that by such means they sought the crown of martyrdom. They styled themselves "Milites Christi Agnostici," and called their chiefs the leaders of the sons of the Holy One. Constantine treated them with forbearance, but under his successor they were put under restriction by the civil power.

CIRCUMPO'LAR STARS, those stars which, in the apparent daily revolution of the sky, do not pass below the horizon of the observer, or, in familiar language, do not set. It will be remembered that the apparent daily motion of the stars is the reflex of the actual rotation of the earth upon an axis which passes through the center of the earth and a point in the sky, near the north, or polar star; that the lines in which the stars seem to move, called lines of daily motion, are the circumferences of circles that are perpendicular to this axis. Hence, if an observer is at the equator, the axis lies in the observer's horizon, the circles of daily motion are all perpendicular to the horizon, and all stars seem to rise and set. If the observer is at a distance from the equator, for example 10° n., the northern end of the celestial axis is raised 10° above the horizon, and any star which is within 10° of the n. pole of the sky will not pass below the horizon in its apparent motion about the pole. The largest circle of the sky which may be drawn about the pole without passing below the horizon, is called the circle of perpetual apparition. A similar circle drawn about the s. pole, without coming above the horizon, is called the circle of perpetual occultation, and the stars within that circle are never visible to the observer in consideration. But, to an observer in the southern hemisphere, having a s. latitude equal to the n. latitude of the first supposed observer, the terms will be transposed; the circle about the s. pole is to him a circle of perpetual apparition, and the stars within it, circumpolar stars; the corresponding circle about the n. pole is the circle of perpetual occultation, the stars within which never appear above his horizon. The radii of the circles of perpetual apparition and occultation are equal, and equal to the latitude of the observer, and to the altitude of the nearest pole. In the northern states the most conspicuous circumpolar constellations are the great and little bear—the latter containing the pole star—and Cassiopeia. In the southern sky the most brilliant constellation is the southern cross.

CIKIL'LO, DOMENICO, 1734-99; a Neapolitan naturalist who accompanied lady Walpole to France and England, and became a fellow of the royal society, enjoying there and on the continent the friendship of Buffon, Diderot, D'Alembert, and other learned men. When the French established government in Naples in 1799, C. was

chosen a representative, and became president of the legislative commission. After the re-establishment of the royal government, he was sentenced to death, but was offered his life if he would ask for mercy. This he refused to do, and suffered death. He wrote works on botany and entomology.

CIRTA, an ancient city of Numidia, Africa, in the country of the Massyli, regarded as the strongest position in Numidia. It was the center of all the Roman military roads. It was restored by Constantine, and the modern town now bears his name.

CISLEITHANIA, or **CISLEITHAN AUSTRIA**, a name applied to that portion of the Austro-Hungarian monarchy which is represented in the Reichsrath of Vienna. It has about one half the area and four sevenths of the population of the monarchy, and embraces the crown lands once belonging to the German confederation, Dalmatia, Buckowina, and Galicia.

CISPADANE REPUBLIC. See **CISALPINE REPUBLIC**, *ante*.

CISPLATINE REPUBLIC, the name of the republic of Uruguay, 1829-31. It had previously belonged to Brazil and had the name of the Cisplatine province.

CISRHENANE REPUBLIC, the name chosen in 1797 for the proposed confederation of the German towns w. of the Rhine. As the whole region was soon afterwards transferred to France, the name never came into use.

CISSEY, **ERNEST LOUIS OCTAVE COURTOT DE**, b. 1812; in 1853, he served under gen. Trezel in Algeria, and in 1854 in the Crimea, rising to brig.gen. after the battle of Inkerman. He also served in the war with Germany. In 1871, he was elected to the national assembly, and the same year he led the second corps against the Paris commune. He was appointed minister of war in 1871, and served, except in the period of the De Broglie cabinet, until 1876, when he resigned.

CITEAUX, or **CISTEAUX**, a village in the department of Cote d'Or, France, 12 m. from Dijon. It is celebrated for the great abbey founded in 1098, which became the headquarters of the Cistercian order. The buildings are now occupied as a juvenile reformatory. The place became famous for the wines made under the care of the abbots, the celebrated Clos Vougeot having been raised on lands belonging to the abbey.

CITHAERON, MOUNT. See **ELATEA**.

CITRONELLA, the name of an oil imported from Ceylon and used by perfumers, and also the name of a perfume prepared from common balm; and again, of a liquid brought from the West Indies, and used in France to flavor brandy.

CITY POINT, a village and fort on James river, in Prince George co., Va., 10 m. n.e. of Petersburg, occupied during the war of the rebellion by the union army as the principal landing-place and depot for army supplies.

CIUDAD' REAL, a province in s. Spain; 7,543 sq.m.; pop. '70, 264,649. The country consists chiefly of barren plains skirted by lofty hills and mountains, clad with forests, and inclosing deep valleys. The productions are wheat, rye, barley, corn, cattle, horses, asses, sheep, goats, etc. Iron, silver, copper, lead, cinnabar, coal, and marble are found in the mountains. The most famous of the mines is that of quicksilver at Almaden. Hot and cold mineral springs are also found. Considerable manufacturing is done in wool, linen, cotton, silk, soap, wine, and oil. The chief towns are Manzanares, Almodovar, Valdepeñas, and Calatrava.

CIVIALE, **JEAN**, 1792-1867; a surgeon b. in Auvergne, and a pupil of Dupuytren at the hospital of the hotel Dieu in Paris. He was the discoverer of that process of lithotripsy, by which the stone in the bladder is crushed and the fragments removed through the natural channel. He was a member of the leading societies, and an officer of the legion of honor. He published a number of works, all relating to his discoveries and practice in lithotripsy.

CIVIC CROWN, considered among the Romans more honorable than any other reward. It was given for saving the life of a citizen in battle or assault. It was given to Cicero for his discovery of Catiline's conspiracy, and to the emperor Augustus. The C. C. was merely a wreath, at first of twigs of elm, then of beech, and lastly of oak. The one to whom it was given had the right to wear it always. When he appeared in public, if senators were present, they rose to do him honor, and he was excused from all troublesome duties and services, with the same immunities for his father and his father's father.

CIVIL SERVICE (*ante*), in the United States, was partially introduced in the customs and some other offices in 1877 and the years following, but up to this time (1880) it has made no great progress. The general principles of the system are the same as in England, involving the separation of officials from all absorbing political partisanship, and, in general, the retention of capable and deserving civil officers through successive changes of administration. It involves also the promotion of worthy public servants as vacancies may occur. It lays the foundation for all this in conferring offices, not as reward for partisan services, but on strict competitive examination as to character, capacity, and education. By many it is pronounced both impracticable and

undesirable; by others, a fine ideal not likely to be realized; and by others, an indispensable practical reform.

CLACKAMAS, a co. in n.w. Oregon, w. of the Cascade mountains, drained by the Clackamas and Willamette rivers, and intersected by the Oregon and California railroad. Seven hundred sq.m.; pop. '70, 5,953. It is heavily timbered and has a fertile soil. The chief productions are agricultural. Co. seat, Clackamas.

CLADRAS'TIS, a small leguminous tree, resembling the common locust, having a yellow bark with cathartic properties. It is variously called yellow wood, yellow ash, yellow locust, and fustic.

CLAGGETT, THOMAS JOHN, D.D., 1743-1816; a native of Maryland, ordained in England, and the first Protestant Episcopal bishop consecrated on this side of the Atlantic. In 1800, he was chaplain to the U. S. senate, and in 1808, he became rector of Trinity church, Marlborough, Md.

CLAIBORNE, a parish in n.w. Louisiana, on the Arkansas border; 1200 sq.m.; pop. '70, 20,240—10,608 colored. It has an undulating surface partly covered with timber. The chief productions are cotton, corn, wool, and sweet potatoes. Co. seat, Homer.

CLAIBORNE, a co. in s.w. Mississippi, on the Mississippi and the Big Black rivers; 740 sq.m.; pop. '70, 13,386—9,996 colored. The surface is uneven, and the soil is fertile, producing corn, potatoes, cotton, etc. Co. seat, Port Gibson.

CLAIBORNE, a co. in n.e. Tennessee, on the Kentucky border, bounded s. by Clinch river; 350 sq.m.; pop. '70, 9,321—758 colored. It has a rough mountainous surface, but fertile soil, with mines of lead, zinc, and iron. The chief productions are agricultural. Co. seat, Tazewell.

CLAIMS, COURT OF, in the United States, created by act of congress, Feb. 24, 1855, and consisted of three judges appointed by the president and senate, to hold office during good behavior, and to have jurisdiction to hear and determine all claims founded upon any act of congress, or on any regulation of any executive department, or upon any contract, express or implied, with the government of the United States; and all claims which might be referred to it by either house of congress. The United States were represented before it by a solicitor and assistant-solicitor appointed by the president; the solicitor being authorized to appoint a deputy, and the compensation of all members of the court was fixed by law. The court had no power to render a judgment which it could not execute, but reported to congress the cases upon which it had finally acted, the material facts which it found established by the evidence, with its opinion in the case, and reasons therefor, or what was equivalent to an opinion in the return of a judgment as to the rights of the parties upon the facts proved or admitted in the case. By another act, Mar. 3, 1863, two additional judges were to be appointed by the president, and a chief-justice from the whole number of judges (five). The court was also authorized to take jurisdiction of all set-offs, counter-claims, claims for damages, liquidated or unliquidated, or other demands whatsoever on the part of the government against any person making claim against the government in said court. If the judgment of the court be in favor of the government, it shall be filed in the office of the clerk of the proper district or circuit court of the United States, and shall *ipso facto* become and be a judgment of such district or circuit court, and shall be enforced the same as other judgments. If the judgment be in favor of the claimant, the sum thereby found due to the claimant shall be paid out of any general appropriation made by law for the payment of private claims, on presentation to the secretary of the treasury of a duly certified copy of such judgment. In cases where the amount in controversy exceeds \$3,000, an appeal may be taken to the supreme court of the United States at any time within 90 days after judgment. Where the judgment or decree may affect a constitutional question, or furnish a precedent affecting a class of cases, the United States may take an appeal without regard to the amount in controversy. Claims must be filed within six years after the claim accrues, except in cases of disability. The court is required to hold one session annually, commencing on the first Monday in Oct. Members of congress are prohibited from practicing in the court. At the instance of the solicitor of the United States, any claimant may be required to testify on oath. The jurisdiction of the court is not to extend to any claim growing out of any treaty with foreign nations or Indian tribes, unless such claim was pending in said court Dec. 1, 1832; nor shall the jurisdiction of the court extend to any claim against the United States for the destruction, appropriation, or damage of any property by the army or navy engaged in the suppression of the rebellion, from the commencement to the close thereof. Proceedings originate in the court by petition filed; and testimony used in the hearing and determination of claims is taken by commissioners who are appointed for the purpose by the court.

CLAIRVOYANCE, as explained by Mr. Hudson Tuttle—whose language is here in part adopted, but with some decided modifications—"must be regarded as a peculiar state of the mind, in which it is in a greater or less degree independent of the physical body. It presents many gradations from semi-consciousness to profound and death-like trance. However induced, the attending phenomena are similar. The condition of the physical body is that of the deepest sleep. A flame may be applied to it

without producing a quiver of the nerves; the most pungent substances have no effect on the nostrils; pins or needles thrust into the most sensitive parts give no pain; surgical operations may be made without sensation. Hearing, tasting, smelling, feeling, as well as seeing, are seemingly independent of the physical organs. The muscular system is either relaxed or rigid; the circulation impeded in cases until the pulse becomes imperceptible; and respiration leaves no stain on a mirror held over the nostrils. In passing into the clairvoyant state the extremities become cold, the brain congested, the vital powers sink, a dreamy unconsciousness steals over the faculties. There is a sensation of sinking or floating. After a time the perceptions become intensified; we cannot say the senses, for they are of the body, which for the time is insensible. The mind sees without physical organs of vision, hears without organs of hearing, and feeling becomes a refined consciousness" which brings it *en rapport* with some intelligence not its own. "The more death-like the condition of the body, the more lucid the perceptions of spirit or mind, which for the time owes it no faculty." So far as clairvoyance depends on the unfolding of the spirit's perceptions, the extent of that unfolding marks the perfectness of the state, and the nature of that to which the spirit's perceptions are unfolded marks the value of the state. As a mere natural condition the state may be conceived of as the same, whether observed in "the Pythia or Delphic oracles, the vision of St. John, the trance of Mohammed, the epidemic catalepsy of religious revivals, or the illumination of Swedenborg or Davis." In all cases, there may be the same general mode of disclosure; but temperament, education, and character give such bias and color as to deprive the mere natural state of all claim to infallibility in teaching, and commonly of all value. A divine illumination, or any degree of value, can be proved in any particular case of clairvoyance, only by evidences aside from the mere state itself. The tendency of the clairvoyant is to make objective the subjective ideas which he has acquired by education or fixed by character; "if a Christian, to see visions of Christ; if a Moslem, of Mohammed; somewhat as dreams reflect the ideas of wakefulness." Yet there is claimed to be "a profound condition which sets all these aside, in which the mind appears to be divested of all physical trammels, and to come in direct contact with the thought-atmosphere of the world—a condition in which time and space have no existence, and matter becomes transparent." It may be found difficult to prove or disprove the last assertion, as it is not evident what is intended by the "thought-atmosphere of the world." By whatever name called, this condition of clairvoyance or trance has been observed among many peoples and nations from the earliest times. How near or remote it has been from the prophetic power, or from the epidemic frenzy of religious or fanatical excitement, from mental ecstasy or epilepsy, it is not our province to determine. Theories, opinions, and judgments upon the causes, conditions, and results of clairvoyance are almost as various as the number of those who have studied its phenomena. The Latin author Apuleius, who wrote in the 2d c. A.D., in his *Discourse on Magic* very clearly refers to the practice of mesmerism or clairvoyance. He says: "And I am further of the opinion that the human mind may be lulled to sleep and so estranged from the body as to become oblivious of the present being either summoned away from it by the agency of charms, or else enticed by the allurements of sweet odors; and that so all remembrance of what is done in the body having been banished for a time, it may be restored and brought back to its original nature, which no doubt is divine and immortal, and thus, being in a kind of trance, as it were, may presage future events."

CLALLAM, a co. in the n.w. section of Washington territory, lying along the strait of Juan de Fuca and the Pacific ocean; 1720 sq.m.; pop. 70,408, besides Indians. The soil is fertile; chief business, agriculture. Co. seat, New Dungeness. In the co. and elsewhere in the region are the remnants of a tribe of Indians known as the Clallams, but calling themselves Nuskliyum. In 1870, they numbered about 600, but were rapidly diminishing. Their language is a dialect of the Selish.

CLAP, ROGER, 1609-91; a native of Devonshire, England; one of the founders of Dorchester, Mass. He held several prominent positions, but is known chiefly by his memoirs of leading men of New England.

CLAP, THOMAS, 1703-67; a minister settled at Windham, Conn., in 1727, and in 1739 elected president of Yale college, holding the chair for 27 years, and doing great service to the institution. Through his efforts a college building and chapel were erected. He published a history of the college, and intended to write a history of Connecticut, but his materials were lost or carried away during the raid upon New Haven by the British under gen. Tryon.

CLAPARÉDE, JEAN LOUIS RENÉ ANTOINE ÉDOUARD, 1832-70; a Swiss naturalist, who studied medicine and natural science at Berlin. He devoted himself especially to the study of echinoderms, infusoria, and rhizopods, in which he was joint laborer with J. Müller, Ehrenberg, and Lachmann. In 1857, he became professor of comparative anatomy in the Geneva academy, and subsequently visited England and the Hebrides. For the benefit of his health, he resided for some time in Naples, where he published an important work on the annelidæ of the gulf. He bequeathed his library to Geneva, his native city.

CLAPP, THEODORE, 1792-1866; a native of Massachusetts, graduated at Yale in 1814, studied theology at Andover, and in 1822, became pastor of the first Presbyterian church in New Orleans. In 1834, he became a Unitarian, and organized a church which included a large portion of his Presbyterian charge. He was highly esteemed for his faithfulness to duty in seasons of yellow fever, having labored unceasingly through 29 of these epidemics. His only published work is *Autobiographical Sketches and Recollections*.

CLARAC, CHARLES OTHON FRÉDÉRIC JEAN BAPTISTE, Count, 1777-1847; a native of Paris, an artist and antiquary. He superintended the excavations at Pompeii, of which he gives an account in *Fouilles faites à Pompeii*. He was for a time a member of the French embassy in Brazil, and on returning to Paris, was made keeper of the museum of antiquities in the Louvre, of which museum he published a catalogue. Others of his works are *Manuel de l'Histoire de l'Art chez les Anciens*, and *Musée de Sculpture Antique et Moderne*.

CLARE, a co. in central Michigan, on the head-waters of Muskegon river, reached by the Flint and Pere Marquette railroad; 650 sq.m.; pop. '70, 366. It is mostly covered with forests. Co. seat, Farwell.

CLARE, JOHN, 1793-1864; known as the *Northamptonshire Peasant Poet*, the son of a farm laborer. He was taken from school at the age of 7, and set to watching geese and sheep; at 12 he worked on a farm, paying for such education as he could get in earnings from his meager wages. He tried to get a place in a lawyer's office, but failed; studied algebra; fell in love; became a pot-boy in a public-house; was apprenticed to a gardener; ran away; enlisted in the militia; lived among the gypsies; worked as a lime-burner, and at the age of 25 was compelled to seek parish relief. Two years after, he published *Poems Descriptive of Rural Life and Scenery*, and in the following year his *Village Minstrel and other Poems*. He became famous, was patronized and flattered, and overrun with curious visitors, fell into dangerous habits, and died a madman in a lunatic asylum.

CLAREMONT, a t. in Sullivan co., N. H., on the Connecticut river, and the southern division of the Vermont Central railroad; 48 m. n.w. of Concord; pop. '70, 4,053. The principal village is 3 m. from the Connecticut, on the Sugar river, which furnishes abundant water-power, employed in the manufacture of cotton, wool, and paper. The Stevens high school, founded by Paran Stevens, a hotel-keeper first in Claremont and afterwards in Boston and New York, is the principal public institution.

CLARENCE, DUKE OF, the title occasionally given to a younger male member of the British royal family.

CLARENDON, a co. in e. South Carolina, bounded on the s. and w. by the Santee; 700 sq.m.; pop. '70, 14,038-9,366 colored. The surface is generally even and the soil fertile, producing corn, cotton, rice, etc. Co. seat, Manning.

CLARENDON, a t. and village in Rutland co., Vt., on Otter creek and the Western Vermont railroad, 6 m. s. of Rutland; pop. of township, '70, 1173. C. is much visited for its mineral springs, the waters of which are said to be useful in kidney and cutaneous diseases.

CLARENDON PRESS, a printing establishment connected with Oxford university (England); founded in 1672, and named Clarendon, because the printing-house was paid for by the profits on the sale of Lord Clarendon's *History of the Rebellion*, of which work the university has a perpetual copyright.

CLARI, GIOVANNI CARLO MARIA, b. 1699; an Italian composer of music, pupil of Colonna, chapel-master, and author of the opera *Il Savio delirante*. He wrote also church music, duets, and trios.

CLARION, a co. in n.w. Pennsylvania, on the Alleghany and Clarion rivers, traversed by the Alleghany railroad, 600 sq.m.; pop. '70, 26,537. Surface hilly, and soil fertile, producing wheat, corn, oats, rye, buckwheat, butter, wool, etc. Co. seat, Clarion.

CLARK, a co. in e. Illinois, bordering on Indiana, and bounded on the s.e. by Wabash river, intersected by the St. Louis, Vandalia, Terre Haute and Indianapolis railroad; 460 sq.m.; pop. '70, 18,719. The chief business is agriculture. Co. seat, Marshall.

CLARK, a co. in central Kentucky, bounded by the Red and Kentucky rivers on the s.; intersected by the Lexington and Big Sandy railroad; 210 sq.m.; pop. '70, 10,822-3,715 colored. It has a hilly and broken surface, with unusually fertile soil; chief products, wheat, corn, butter, and wool. Co. seat, Winchester.

CLARK, a co. in s.e. Mississippi, on the Alabama border, intersected by the Mobile and Ohio railroad; 650 sq.m.; pop. '70, 7,505-3,429 colored. The region is hilly, and occupied chiefly by pasture lands. The crops are corn, cotton, rice, etc. Co. seat, Quitman.

CLARK, a co. in s.w. Ohio, on Mad river, traversed by the Cincinnati, Sandusky and Cleveland, the Pittsburg, Cincinnati and St. Louis, and a branch of the Cleveland, Columbus, Cincinnati and Indianapolis railroads; 380 sq.m.; pop. '70, 32,070. The

surface is diversified; soil fertile, with plenty of timber, and well watered. The chief products are wheat, corn, oats, potatoes, butter, wool, and flax. Co. seat, Springfield.

CLARK, a co. in Wisconsin, on the Black and Eau Claire rivers, reached by the w. branch of the Milwaukee and St. Paul railroad; 1548 sq.m.; pop. '70, 3,450. It has a hilly surface and fertile soil. Agriculture is the chief business. Co. seat, Neilsville.

CLARK, ABRAHAM; 1726-94; one of the signers of the declaration of American independence. He was a native of New Jersey, in which colony and state he held many important offices, representing the state in congress, and in the commercial convention of 1786.

CLARK, ALONZO, a graduate of Williams college, and in medicine of the New York college of physicians and surgeons in 1835, in which institution he was professor of physiology and pathology, and of the practice of medicine. He has been president of the New York state medical society, and has been a leading hospital and general practitioner in New York city for many years.

CLARK, ALVAN, b. Mass., 1804; the son of a farmer, and a self-taught engraver, portrait-painter, and optician. His telescopes have won high reputation and the praise of astronomers in all countries. He is the inventor of a double eye-piece, an ingenious method of measuring celestial arcs of from three to sixty seconds. In 1863, with one of his own telescopes he discovered a new star near Sirius, in honor of which the French academy of sciences awarded to him the Lalande prize.

CLARK, DAVIS WASGATT, D.D., 1812-71; a native of Maine, graduated at Wesleyan university in 1826, and for seven years presided over the Amenia seminary. In 1852, he was editor of the *Ladies' Repository*, and of the works issued by the western Methodist book concern. In 1864, he was elected bishop of the Methodist Episcopal church. He published *Treatise on Mental Discipline; Fireside Readings; Life and Times of Bishop Hedding; Man Immortal; Sermons*; etc.

CLARK, JONAS, 1730-1805; a graduate of Harvard in 1752, and pastor at Lexington, Mass. It was near his residence that the first blood of the revolution was shed. The next year he preached an anniversary sermon on the battle.

CLARK, LEWIS GAYLORD, 1810-73; for 25 years the editor of the *Knickerbocker Magazine*, a monthly publication in New York city. He was the twin brother of Willis Gaylord, who wrote the *Ollapodiana* for the *Knickerbocker*, and at the time of his death (1841) was the editor of the *Philadelphia Gazette*.

CLARK, THOMAS, 1801-67; a Scotch chemist, and lecturer on chemistry, in the Glasgow mechanics institution. He was apothecary to the Glasgow infirmary, and in 1833 was professor of chemistry in Marischal college, Aberdeen. He made many valuable discoveries in chemical science.

CLARK, THOMAS MARCH, D.D., LL.D., b. Mass., 1812; graduate of Yale, in 1831; studied theology at Princeton, and was licensed to preach in 1835. In 1836, he became an Episcopalian, and was made rector of Grace church, Boston. In 1843, he went to Philadelphia, but returned to Boston four years later. In 1854, he was consecrated bishop of Rhode Island. He has published *Early Discipline and Culture* and *Primary Truths of Religion*.

CLARKE, a co. in s.w. Alabama, between the Tombigbee and Alabama rivers; 1270 sq.m.; pop. '70, 14,663—7,565 colored. The surface is uneven, and much of it is covered with pine forests. Corn and cotton are the leading productions. Co. seat, Clarks-ville.

CLARKE, a co. in s.w. Arkansas, on the Washita and Little Missouri rivers, 941 sq.m.; pop. '70, 11,953—3,492 colored. The chief productions are corn and cotton. Co. seat, Arkadelphia.

CLARKE, a co. in n.e. central Georgia, on the Oconee river and its branches, reached by the Athens branch of the Georgia railroad. The land is poor, except near the streams. Productions; wheat, corn, oats, cotton, etc. Gold, garnets, and tourmaline are found. Co. seat, Athens.

CLARKE, a co. in s.e. Indiana, on the Ohio river, traversed by four or five railroads; 400 sq.m.; pop. '70, 24,770. The surface is level and the soil fertile. Iron, limestone, and hydraulic cement are found. Productions, wheat, corn, oats, potatoes, butter, wool, tobacco, and sorghum molasses. Co. seat, Charleston.

CLARKE, a co. in s.w. Iowa, traversed by the Burlington and Missouri River rail road. Drained by the e. fork of Grand, and Whitebreast, and South rivers; 432 sq.m. pop. '70, 8,735. Surface mainly prairie, and soil good; products, wheat, corn, oats, butter, wool, etc. Co. seat, Osceola.

CLARKE, a co. in n.e. Missouri, on the Mississippi and Des Moines rivers; 516 sq.m.; pop. '70, 13,669. The surface is uneven, chiefly of fertile prairie lands, with forests of good timber. Productions almost entirely agricultural. Co. seat, Waterloo.

CLARKE, a co. in n. Virginia, on the West Virginia border, traversed by the Winchester, Potomac and Strasburg division of the Baltimore and Ohio railroad, and inter-

sected by the Shenandoah river, 208 sq.m. ; pop. '70, 6,670—2,159 colored. It is a hilly region, with fertile soil, producing wheat, corn, wool, etc. Co. seat, Berryville.

CLARKE, a co. in the s.w. part of Washington territory, bounded s. and w. by Columbia river, which separates it from Oregon; 1400 sq.m. ; pop. '70, 3,081. The soil is fertile, and agriculture is the chief business. Co. seat, Fort Vancouver.

CLARKE, GEORGE ROGERS, 1752-1818; a native of Virginia, who served against Benedict Arnold in that colony in 1780. He was made a brig. gen. in 1781.

CLARKE, HENRY F., b. 1820; graduated at West Point in 1843. He served in the Mexican war, and was in ten battles; at Molino del Rey he was wounded. In the war of the rebellion he served in the commissary department, and was made brevet maj. gen.

CLARKE, JAMES FREEMAN, D.D., b. N. H., 1810; a graduate of Harvard, and of Cambridge divinity school; pastor of a Unitarian church in Louisville, Ky., then of the Church of the Disciples in Boston; and for many years one of the overseers of Harvard college. Besides a vast number of articles contributed to current journals and magazines, he has published *Theodore* (a translation from the German); *Campaign of 1812*; *Even Wets in Europe*; *Christian Doctrine and Forgiveness*; *Service Book and Hymn Book for the Church of the Disciples*; *Memoirs of the Marchioness d'Osso*; *Christian Doctrine of Prayer*; *The Hour which Cometh and Now Is*; *Orthodoxy, its Truths and Errors*; *Steps of Belief*; *The Ten Great Religions*; *Common Sense in Religion*, etc.

CLARKE, JOHN, 1609-76; an English physician, who came to Massachusetts soon after the Plymouth settlement was effected. He was one of the friends of Ann Hutchinson, and with her was driven out of the colony. Roger Williams received him, and Clarke thus became one of the founders of Rhode Island. He founded in Newport (in 1633, some say; others, 1644) a Baptist church, which some believe to be the earliest in America of that denomination. He went with Williams to England in 1651, as an agent for the colony, and there published *Id News from New England, or a Narrative of New England Persecution*. After spending 12 years in England, he procured a second charter for Rhode Island, which secured to every person at all times the right to follow his own judgment in matters of religious concern. On his return, he resumed the care of the Newport church, and kept the pulpit until his death.

CLARKE, McDONALD, 1798-1842; known as the "mad poet." He was a native of Connecticut, but was for many years a conspicuous figure in New York city. His madness was never violent, nor of easy detection by strangers. It was a boundless egotism rather than lunacy. He believed himself to be a great poet, and wrote a few good lines amidst an ocean of trash. Some of his conceits were admirable, however, and such a striking figure as this, "Night drew her mantle o'er her breast, and pinned it with a star," will have long life. Personally, he was excessively formal and polite, and free from bad habits. Though always in the depths of poverty, he played the gentleman to the last. His death was peculiarly sad. He was arrested one night by a watchman, who did not know him, as a destitute vagrant, and locked in a cell. In the morning he was found dead, drowned by an overflow of water caused by neglecting to shut off the faucet.

CLARKE, MARY VICTORIA COWDEN, b. 1809; daughter of Vincent Novello, and sister of Clara Novello, the vocalist. She was the pupil and associate of Mary Lamb, and was familiar with the literary men and women of half a century ago. At the age of 19 she was married to Charles Cowden Clarke, and soon afterwards began the great work of her life, the *Concordance to Shakespeare*. This book cost her 16 years of almost uninterrupted labor. It was published in London in 1846. She afterwards published *The Adventures of Keli Bim, Mariner*; *The Girlhood of Shakespeare's Heroines*; *The Iron Cousin*; *World-noted Women*; *Portia, and other Stories of the Early Days of Shakespeare's Heroines*, etc.

CLARKE, WILLIAM, 1770-1833; a native of Va., appointed by Jefferson second lieut. of artillery, and ordered to join the Rocky mountain expedition which left St. Louis in Mar., 1804. To Clarke's thorough knowledge of Indians and their habits the success of the expedition was mainly due. In 1813, he was appointed governor of Missouri, and held the office until the state organization was completed. In 1822, he was made superintendent of Indian affairs, which office he held until his death.

CLARKE'S FORK, or CLARKE'S RIVER, formed by the junction of Flathead and Bitter-root rivers, in Montana, and flowing n.w., joining the Columbia river almost exactly on the line between the United States and Canada; length, about 650 miles.

CLARKSVILLE, a village in Montgomery co., Tenn., on the Cumberland river, and the Memphis and Louisville railroad, 48 m. n. of Nashville; pop. 3,200. It is a shipping point for tobacco, and the center of a large trade in that article.

CLASSIFICATION, the act of forming into a class or classes; a distribution into groups, such as classes, orders, families, etc., according to relations or affinities. Artificial C. is an arrangement based on principles adopted without reference to natural relations, or in ignorance of them. Natural C. is an exhibition of systematic order as found in nature.

CLASSIS, in the Reformed church of Holland (and thence brought to America) the name of an ecclesiastical body, corresponding to a presbytery. The C. hears appeals from the consistories, which are the official boards of local churches, and the synod hears appeals from the Classis. The C. also confirms and dissolves pastoral connections, ordains and deposes ministers, and sends delegates to the local and general synods.

CLATSOP, a co. in n.w. Oregon, on the Columbia river and the Pacific ocean; 1100 sq.m.; pop. '70, 1255. The soil is good, and timber is abundant. Co. seat, Astoria.

CLAUDE, JEAN, 1619-87; a French Protestant preacher and controvertist, professor of theology in the Protestant college at Nîmes. He had a long controversy with Bossuet and Arnauld concerning the eucharist. On the revocation of the edict of Nantes he fled to Holland, and preached at the Hague until his death.

CLAUDIUS, MARCUS AURELIUS GOTHICUS, the second of the Roman emperors named Claudius, b. in the first half of the 3d century. He had great military ability. Decius gave him command of an army, and Valerian appointed him general on the Illyrian frontier, and ruler of the provinces of the lower Danube. When Gallienus died, he was chosen emperor, it is said at his own request.

CLAUDIUS, MATTHIAS, 1743-1815; a German poet known also by the *nom de plume* of "Asmus." He wrote for the *Wandsbecker Bote* (a weekly publication), a great number of poems which suited the popular taste and were everywhere repeated and admired. In his later years, he became devout, and gave up light verses to translate the works of St. Martin and Fenelon. His most popular song is the Rhine-wine song, still often heard at festivals in Germany.

CLAUDIUS CÆCUS, APPIUS, of the 4th c. B.C.; a Roman patrician and author. While censor he achieved some radical constitutional changes. He filled senatorial vacancies with men of low birth, and when his nominations were rejected he continued, in defiance of long established custom, to hold his office, even although his colleague had resigned. He also held on to the censorship for five years in defiance of the law which limited the term to a year and a half. In many ways, he invaded the traditional rights of the patricians and elevated the lower classes. He built a road and an aqueduct and gave them his own name, a thing before unheard of; and these public works have kept his memory down to our times. In 307, he was elected consul, but his military triumphs were unimportant. He was blind and tottering with age when Cineas, the minister of Pyrrhus, king of Epirus, visited Rome to make a treaty; but the fiery eloquence of Claudius so discouraged Cineas that he quickly gave up the work, and the Romans forgot their recent misfortunes in the patriotic appeals of the aged consul.

CLAUDIUS CRASSUS, APPIUS. See APPIUS CLAUDIUS CRASSUS, *ante*.

CLAUSEN, HENRIK NIKOLAI, b. 1793; a Danish statesman and theologian, professor of theology in the university of Copenhagen, editor of the *Periodical for Foreign Theological Literature*, and author of a number of religious works. He was president of the provincial diet in 1846, and two years later a member of the constituent assembly, and one of the privy council. He was also one of the signers of the Danish constitution. In 1851, he resigned from the cabinet, but retained his seat in the diet.

CLAUSEWITZ, KARL VON, 1780-1831; a Prussian soldier and author. In 1806, he was adjutant to prince Augustus, and was captured by the French. After the restoration of peace he acted as maj.gen. of staff, and as military instructor to the crown prince of Prussia, and to prince Frederick of the Netherlands. In the Prussian army he served with distinction; and in the campaign of 1813 he was a staff officer under Blücher. He wrote the history of that campaign. In 1818, he was made maj.gen. and director of the military academy, and in 1831, chief of the general staff of Gneisenau's army on the Polish frontier. His works are good authority on military science and history.

CLAUSIUS, RUDOLPH JULIUS EMANUEL, b. 1822; in 1825, professor in the polytechnic institute of Zurich; in 1867, professor in the university of Würzburg, and in 1869, professor at Bonn. His mathematical calculations based on the dynamical theory of heat, intended to show the scientific necessity of a Creator and the possibility of miracles, have attracted much attention.

CLAVERACK, a village and township in Columbia co., N. Y., on the Hudson and Chatham railroad, 4 m. s.e. of Hudson; pop. '75, 3,817. Among the public institutions are the Hudson river collegiate institute and the Claverack academy. There are a number of important manufactories in the township.

CLAY, a co. in e. Alabama, on the tributaries of the Tallapoosa and Coosa rivers; 700 sq.m.; pop. '70, 9,560-737 colored. It has a good soil for agriculture; products are wheat, corn, oats, cotton, butter, etc. Co. seat, Ashland.

CLAY, a co. in s.e. Dakota, on the Nebraska border, intersected by Vermilion river, and the Dakota Southern, Sioux City, and Pembina railroad; 500 sq.m.; pop. '70, 2,621. The chief business is agriculture. Co. seat, Vermilion.

CLAY, a co. in n.e. Florida, bounded on the e. by St. John's river, and reached in its n.w. corner by the Florida railroad; 430 sq.m.; pop. '70, 2,098-399 colored. It has a

level surface; and produces corn, cotton, sweet potatoes, and molasses. Co. seat, Green Cove Springs.

CLAY, a co. in s.w. Ga., bordering on Alabama, intersected by the Fort Gaines branch of the Southwestern railroad; 200 sq.m.; pop. '70, 5,493—2,849 colored. The surface is level; the soil fertile, producing corn, cotton, etc. Co. seat, Fort Gaines.

CLAY, a co. in s.e. Illinois, on the Little Wabash river, intersected by the Springfield and Illinois Southern and the Ohio and Mississippi railroads; 440 sq.m.; pop. '70, 15,875. Surface, prairie and forest; productions, wheat, corn, oats, butter, honey, sorghum molasses, etc. Co. seat, Louisville.

CLAY, a co. in s.w. Indiana, on Eel river, crossed by the St. Louis, Vandalia, Terre Haute, and Indianapolis railroad, and the Wabash and Erie canal; 360 sq.m.; pop. '70, 19,084; in '80, 25,277. It has a level surface, with beds of coal and iron ore. The chief productions are agricultural. Co. seat, Bowling Green.

CLAY, a co. in n.w. Iowa, on the Little Sioux and its tributaries; 700 sq.m.; pop. '70, 1523. Productions agricultural. Co. seat, Peterson.

CLAY, a co. in e. Kansas, intersected by Republican river; 660 sq.m.; pop. '70, 2,942. Agriculture is the principal business. Co. seat, Clay Centre.

CLAY, a co. in s.e. Kentucky, on the headwaters of Kentucky river; 870 sq.m.; pop. '70, 8,297—495 colored. It has a mountainous surface, and fertile soil, producing corn, oats, wool, tobacco, etc. One of the principal industries is the manufacture of salt. Co. seat, Manchester.

CLAY, a co. in n.w. Minnesota, bounded on the w. by the Red river of the North, and crossed by the Northern Pacific railroad; 380 sq.m.; pop. '70, 92. There is no considerable settlement in the county.

CLAY, a co. in w. Missouri, bounded on the s. by the Missouri river, and crossed by a branch of the Hannibal and St. Joseph railroad; 415 sq.m.; pop. '70, 15,564—1846 colored. Surface uneven, and soil fertile, producing the usual agricultural crops. Co. seat, Liberty.

CLAY, a co. in s.e. Nebraska, on Little and Big Blue rivers; 576 sq.m.; pop. '70, 54. It has an undulating surface, and fertile soil.

CLAY, a co. in n.w. North Carolina, on the Georgia border, watered by the head streams of the Hiawasse river; 200 sq.m.; pop. '70, 2,461—142 colored. Productions agricultural. Co. seat, Haysville.

CLAY, a co. in n. Tennessee, on the Kentucky border, intersected by the Cumberland river; 175 sq.m. Co. seat, Butler's Landing. This co. was organized after the census of 1870.

CLAY, a co. in n.w. Texas, bordering on the Indian territory and the Red river; 1100 sq.m. The co. is very little settled.

CLAY, a co. in central West Virginia, on Elk river; 400 sq.m.; pop. '70, 2,196. Agriculture is the chief business. Co. seat, Clay Court-house.

CLAY, GREEN, 1757—1826; a native of Virginia, and a pioneer in Kentucky, where he was a land surveyor in early life. While the country belonged to Virginia he represented the Kentucky district in the Virginia legislature. He was in both the Virginia and Kentucky conventions for the ratification of the federal constitution. He was for several years in the Kentucky legislature, at one time speaker of the senate. In 1813, he led a force to the relief of gen. Harrison, who was besieged by the British at fort Meigs; and he defended that fort successfully against the British and Indians under gen. Proctor and the renowned Tecumseh.

CLAY, HENRY (*ante*), was the son of a Baptist preacher in humble circumstances, who died when Henry was five years old. The mother married ten years later and went to Kentucky, leaving Henry (the fifth of seven children) a clerk in a store in Richmond, Va. When about 16 years old, Henry found a place as copyist in the office of the clerk of the court of chancery, and turned his attention to the law. He was licensed to practice when 20 years old, and, following his mother into the wild west, opened an office in Lexington. He won practice and political position very easily, and in 1806—a few months before he was eligible by age—he was chosen to fill a vacancy in the U. S. senate. His term ended with the session, but in that brief period he had foreshadowed his coming fame as the champion of internal improvements by the national government. The next year, he was elected to the state legislature and chosen speaker of the lower house. A proposition that each member of the legislature should clothe himself in home-made clothing provoked remark by Humphrey Marshall that it was the proposition of the demagogues. As an orator, he had immense power over his audiences, whether cultured or unrefined; and his eloquence is one of the traditions of the western states, and, indeed, of the whole country. He had a wonderful personal magnetism, which attracted to him an enthusiastic friendship.

CLAYBORNE, WILLIAM, an early English settler in Virginia, member of the council and secretary of the colony. He was for many years at war with the Maryland settlers on questions of territorial jurisdiction, and at one time forcibly took possession of

Calvert's government. In 1651, the English council made him one of the commissioners for the reduction of Virginia to obedience to Cromwell's commonwealth, and he afterwards took part in bringing Maryland also into obedience. In the Bacon rebellion, he was one of the court-martial for the trial of the prisoners. His descendants are very numerous in Virginia.

CLAYTON, a co. in central Georgia, on Flint river, traversed by the Macon and Western, and the Atlanta and West Point railroads; 150 sq. m.; pop. '70, 5,477—1743 colored. Productions, wheat, corn, cotton, etc. Co. seat, Jonesborough.

CLAYTON, a co. in n.e. Iowa, on the Mississippi river, intersected by the McGregor and Missouri River railroad; 760 sq. m.; pop. '70, 27,771. The surface is chiefly fertile prairie; and water power and timber are abundant. The chief productions are, wheat, corn, oats, barley, butter, and wool. Co. seat, Elkader.

CLAYTON, a village and t. in Jefferson co., N. Y., a port of entry on the river St. Lawrence, at the termination of the Utica and Black River railroad, 108 m. n. of Utica; pop. '75, 4,207. The village, 11 m. above Alexandria bay, is near the famous Thousand Islands of the St. Lawrence, with which it has connection by steamboat.

CLAYTON, JOHN, a native of England who came to Virginia about 1710 and died there in 1773. He was educated for a physician, but gave his whole attention to botany, and sent to the royal society many papers on the flora of the American colonies.

CLAYTON, JOHN MIDDLETON, 1796—1856; a native of Delaware, a graduate at Yale in 1815, who became an eminent lawyer in his own state. He was for many years a member of the U. S. senate, in which he held a prominent position. In 1849, he was appointed secretary of state, in which office he was followed by Daniel Webster. In 1851, he was again sent to the senate, and was in office when he died. He was the negotiator on the part of the United States in 1850 of the treaty with England guaranteeing neutrality of interoceanic communication across Central America. This agreement was known as the Clayton-Bulwer treaty.

CLAYTONIA, or SPRING BEAUTY, a genus of plants of the order *portulacaceæ*, an early and brilliant spring flower in the United States, and naturalized in Europe. The two species are perennials, growing from tubers in moist places.

CLEARCHUS, a Spartan commander of the 5th c. B.C. After serving in the Hellespont, and at the battle of Cyzicus, he became governor of Byzantium; but during his absence the town was surrendered and he was punished by a fine; after being sent into Thrace to protect the Greek colonies he was recalled by the Ephori, but he refused to obey, and made himself master of Byzantium. Being driven thence, he visited the court of Cyrus, for whom he levied a small army of Greek mercenaries and led them in the expedition of the Ten Thousand. He was the only Greek who knew the real intentions of Cyrus, and it was not until they had proceeded too far for him to retire with safety that he made known the object for which they had been collected. He commanded a division of his countrymen in the battle of Cunaxa, and led them on their difficult return journey until, being treacherously seized by Tissaphernes, he was sent to the court of Artaxerxes, where he was put to death.

CLEAR CREEK, a co. in n. Colorado, the center of the silver-mining region; 350 sq. m.; pop. '70, 1596. The Medicine Bow mountains occupy a considerable part of the county. The soil in the valleys is good, and water-power is plentiful. Co. seat, Georgetown.

CLEARFIELD, a co. in w. Pennsylvania, intersected by the Susquehanna river and Clearfield creek, and reached by a branch of the Pennsylvania Central railroad; 1150 sq. m.; pop. '70, 25,741. The e. portion is rugged and mountainous, but in other parts there is some good land. Coal and iron are plentiful. Co. seat, Clearfield.

CLEARING-HOUSE, in banking. In New York, Philadelphia, Chicago, Cincinnati, and other large cities of the United States, clearing-houses have been for several years in successful operation. Either a well-known bank or a special building is used for the purpose. The best equipped and most admirably arranged clearing-houses are those of New York and Philadelphia. The room for this business is provided with separate numbered desks for a representative of each bank, and a raised *dais* for the manager of the clearing-house. Each bank belonging to the system is represented by two clerks, one of whom takes his place at his special desk, and the other stands in front to act as messenger. Usually at 8.30 A.M., the clearing-house manager calls to order, and with the utmost regularity the business of the hour proceeds. The messenger receives from his clerk packages intended for other banks, and moving from left to right visits each desk, leaving with the entering clerk such matters as he may have for him, together with a complete list of his transactions. Should all be correct, the clerks then return to their respective banks with statements of debits or credits—which must be settled with the clearing-house on the same morning. Should any errors be discovered, the clerks are not allowed to leave the clearing-house until they have been rectified, and in some instances fines are imposed and collected from the banks represented by the offending clerk. Complete records of all business therein transacted are preserved at the clearing-house. Thus transactions which formerly required many hours, are completed in a few minutes at a

great saving of expense. The amounts transferred in some of the clearing-houses represent many millions of dollars daily. The New York clearing association commenced its operations on Oct. 11, 1853, numbering as members 52 banks, representing a capital of \$46,721,262.50. The number was soon reduced to 48 by the retirement and closing up of four, in consequence of their inability to meet its requirements, reducing the aggregate capital to \$45,118,800. On the 1st of June, 1879, the association consisted of 59 members, including the assistant treasurer of the United States at New York. The aggregate capital of the banks of the city was \$83,508,800, with a surplus of \$27,264,100, a reduction of capital and surplus in less than six years of \$36,934,000, caused, in the opinion of bankers, principally by unequal and excessive tax under both federal and state laws. The transactions of the first day, Oct. 11, 1853, amounted to \$23,938,632.25. Total transactions since its organization to June 1, '79, amounted to \$526,110,047,756.40, a daily average, during 25 years and 7½ months, of \$67,545,262.26. The highest daily average for any one year was for that ending Oct. 1, 1869, viz., \$125,058,789.91. The total transactions for that year were \$38,527,347,294.42. The total transactions for the year ending June 1, 1879, were \$23,397,402,934.05, a daily average of \$76,167,983.44. The largest amount for any one day during the year was \$122,029,347, on Jan. 27, 1879, and for any one day since the organization of the association, \$206,034,920.50, on Nov. 17, 1868. This was the day after the Black Friday famous for the collapse of the gigantic "corner" in gold. The largest balance paid to the clearing-house by any bank was \$4,774,039.59, on April 5, 1872. The system in use by the New York clearing-house is so perfect that, of the enormous transactions made through it, no error or difference of any kind exists in any of its records; neither has any bank belonging to the association sustained any loss in its connection by the failure of any bank or otherwise, while a member. It has proved of great service during financial emergencies, notably in aiding and sustaining the United States government at the breaking out of the civil war; and during financial panics, especially that of 1873, when, by combining the resources of its members through the machinery of the clearing-house, they were enabled to greatly modify the dangers which so seriously threatened the whole country. Its operations amount to over 65 per cent of the total exchanges of the 23 clearing-houses of the United States, and consequently it represents in a measure the magnitude of the daily business of the country; while the fluctuations in its daily, monthly, and yearly transactions, as shown by its records, are of great value both to the merchant and financier. The clearing-house occupies a building owned by the association, and arranged with special reference to its requirements.

CLEAR LAKE, a body of water in Lake co., Cal., 112 m. n. of San Francisco. It is about 25 m. long by 2 to 6 m. wide, and is in a picturesque region.

CLEAVELAND, a co. in s.w. North Carolina, on the South Carolina border, intersected by First Broad river, and a division of the Wilmington, Charlotte and Rutherford railroad; 660 sq.m.; pop. '70, 12,696—2,063 colored. The chief productions are agricultural. King's mountain is near the s.e. corner. Co. seat, Shelby.

CLEAVELAND, PARKER, LL.D., 1780—1858; a native of Massachusetts, graduated at Harvard, in 1799. In 1805, he was chosen professor of mathematics and natural philosophy, and lecturer on chemistry and mineralogy in Bowdoin college, a position which he retained until his death, although many professorships in other colleges and the presidency of his own were offered to him. His attention was devoted chiefly to mineralogy, in the interests of which he explored particularly the White mountains, and corresponded with many scientific men abroad. In the 53 years of his connection with the college he kept a meteorological journal, making three entries every day.

CLEBURNE, a co. in n.e. Alabama, on the Georgia border, watered by the Tallapoosa, and intersected by the Selma, Rome and Dalton railroad; 700 sq.m.; pop. '70, 8,017—576 colored. Surface uneven; productions mainly agricultural. Iron and lead are found. Co. seat, Edwardsville.

CLEEF, JAN VAN, 1616—1716; a Flemish painter whose works are found in many churches of Flanders and Brabant.

CLEMANGES, NICOLAS DE, 1360—94; one of the ablest Roman Catholic writers of the middle ages. He was educated in Paris, and studied theology under Pierre d'Ailly. He was chosen rector of the university of Paris in 1393, and esteemed the most eloquent member of that institution. Clemanges was an ardent advocate of reform in the church, and labored with great pertinacity to heal the schism then existing, that of a double papacy, one at Rome and one at Avignon. His doctrines were much in advance of the age in many points. He placed the authority of general councils over that of the pope, and the authority of the Bible over that of general councils. He doubted whether at all former oecumenical councils the Holy Spirit really presided, as that Spirit would not assist men in pursuing secular aims. He wrote strongly against the immoral lives of the higher clergy, and recommended the teaching of the Bible as a remedy against wars and disturbances. In 1421, at Chartres, he defended the liberties of the Gallican church, and in 1425 he began to lecture on theology in the college of Navarre, continuing his duties as long as he lived.

CLEMENS, SAMUEL LANGHORNE, b. in Missouri, 1835. He is known more generally by his adopted name of "Mark Twain." He learned the trade of a printer, and worked at the case in several western cities, and in Philadelphia and New York. In 1855, he made a voyage down the Mississippi, took a fancy to steamboat life, and learned the business of pilot. His next venture was in mining in Nevada; and in 1862 he became the local editor of the *Enterprise*, in Virginia City, where he remained three years, and began to use the name by which he is so well known. This name is said to be the cry of the lookout on a river steamer, when he throws the lead, and finds the depth of water just two fathoms, "mark twain" signifies "at the mark of two fathoms." From Nevada, Clemens went to San Francisco and was for a time a reporter, and afterwards worked in the gold diggings in Calaveras. In 1866, he spent several months in the Sandwich islands, and on return made a commencement as a lecturer. In 1867, he went with a pleasure party up the Mediterranean to Egypt and Palestine, and on his return described the journey in a serio-comic volume, "*The Innocents Abroad*." After editing a paper in Buffalo, and much lecturing all over the country, he married and settled in Hartford, Conn. His principal books, most of which enjoy remarkable popularity, are *The Jumping Frog, and Other Sketches; Roughing It; and The Innocents Abroad*.

CLEMENT II. (SUIDGER), a Saxon chancellor to the emperor Henry III. of Germany, who made him pope in Dec., 1046, on the abdication of Gregory VI. He died the next year.

CLEMENT III. (PAOLO or PAULINO SCOLARI, bishop of Præneste), elected pope 1187; d. 1191. He settled some of the troubles between the popes and the Roman people by permitting the latter to elect their magistrates, while the nomination of the governor of the city was left to the pope. He incited Philip Augustus and Henry II. of England to undertake the third crusade.

CLEMENT IV. (GUI FOULQUES, archbishop of Narbonne), chosen pope 1265; d. 1268. He had been secretary to Louis IX. of France, and when raised to the chair of St. Peter the papacy was at war with Manfred the Ghibelline usurper of Naples, and C. was compelled to enter Italy in disguise. He made an alliance with Charles of Anjou, the French pretender to the Neapolitan throne; Manfred was slain, and Charles formally established. C. is said to have disapproved of many of the harsh measures of Charles. He also encouraged and protected Roger Bacon.

CLEMENT V. (BERTRAND DE GOTH, archbishop of Bordeaux), chosen pope 1314. He removed the seat of the papacy to Avignon, and suppressed the order of templars. During his papacy, Henry VII. entered Italy, and was crowned in Rome by C.'s legate; but Henry died suddenly, leaving Italy in a condition of anarchy; the Roman barons were at the height of their dissension, and the Lateran palace was burned. C. suppressed in the bloodiest manner the heresy of Fra Dolcino, and died leaving a reputation disgraceful for nepotism, avarice, and cunning. He was the first pope to wear the triple crown.

CLEMENT VI. (PIERRE ROGER, archbishop of Rouen), the fourth of the popes of Avignon, elected 1342; d. 1352. He was entirely under French influence, refused an invitation to return to Rome, and purchased the sovereignty of Avignon from Joanna, queen of Naples, agreeing to pay her 80,000 crowns. He never paid the money, but probably deemed that he had given its equivalent when he absolved the queen for the murder of her husband. He disputed with Edward III. of England concerning that monarch's encroachments upon ecclesiastical jurisdiction, excommunicated Louis of Bavaria, and made some negotiations for a reunion with the eastern church.

CLEMENT VII. (GIULIO DE MEDICI), elected pope 1523; d. 1534. His worldliness and lack of insight into the tendencies of the age disqualified him from comprehending the great religious movement which then convulsed the church, while his timidity and indecision no less disabled him from following a consistent policy in secular affairs. He was at first attached to the imperial interest, but by the overwhelming success of the emperor in the battle of Pavia was terrified into joining the other Italian princes in a league with France. But his zeal soon cooled, and by want of foresight and unreasonable economy he laid himself open to an attack from the turbulent Roman barons which obliged him to invoke the mediation of the emperor. When this danger seemed past, he veered back to his former engagements, and ended by drawing upon himself the host of the imperialist gen., the constable Bourbon, who led his army against Rome, and assaulted and sacked the city, May 5, 1527. The pope retired to the castle of San Angelo, and was there kept a prisoner for six months. He was released upon very onerous conditions, and for several years afterwards followed a policy of subserviency to the emperor, on the one hand endeavoring to induce him to act with severity against the Lutherans of Germany, and on the other striving to elude his demand for a general council. One consequence of this dependence on Charles V. was the breach with England occasioned by the pope's refusal to sanction Henry VIII.'s divorce from Catherine of Aragon.

CLEMENT VIII. (IPPOLITO ALDOBRANDINI), elected to the papacy 1592; d. 1605. He brought about the reconciliation of the church with Henry IV. of France; and to him Europe was indebted for the peace of Vervins (1598) which put an end to the long

contest between France and Spain. He also annexed Ferrara to the states of the church, the last addition of importance to the pope's temporal dominion. The only serious stain upon his character was the execution of Giordano Bruno, Feb. 17, 1600.

CLEMENT IX. (GIULIO ROSPIGLIOSI), elected pope 1667; d. 1669. He adjusted the disputes between the Roman see and those prelates of the Gallican church who had refused to join in condemning the writings of Jansenius.

CLEMENT X. (EMILIO ALTIERI), chosen pope 1670; d. 1676. He was 80 years old when elected, and in consequence of infirmity he left the government to his nephew, cardinal Altieri, whose interference with the privilege of ambassadors occasioned disputes in which the pope was obliged to yield.

CLEMENT XI. GIOVANNI FRANCESCO ALBANI, elected pope 1700; d. 1721. The most memorable event of his rule was the publication in 1713 of the bull *Unigenitus*, which so greatly disturbed the peace of the Gallican church. By this famous document 101 propositions extracted from the works of Quesnel were condemned as heretical, and as identical with propositions already condemned in the writings of Jansenius. The resistance of many French ecclesiastics, and the refusal of French parliaments to register the bull, led to controversies extending through the greater part of the 18th century. Another important decision by this pope forbade the Jesuit missionaries to take part in idolatrous worship, or to accommodate Christian language to Pagan ideas under plea of conciliating the heathen.

CLEMENT XII. LORENZO CORSINI, pope from July, 1730, to Feb., 1740. He was the first pope to condemn the order of Freemasons.

CLEMENT XIII. CARLO REZZONICO, Bishop of Padua, chosen pope 1758; d. 1769, it was suspected from poison. In his time France, Spain, and Portugal urgently demanded the suppression of the Jesuits, but Clement warmly supported them. The pressure, however, became so strong that he was supposed to be about to give way, and had convoked a consistory, when he died very suddenly, and thus the Jesuits were saved for the time.

CLÉMENT, JACQUES, 1565-89; a monk who was selected by the leader of the league for the assassination of Henry III. The day before the murder C. fasted, partaking only of the Lord's supper. In the morning, Aug. 1, 1589, he was admitted to the palace as the bearer of a letter, and while the king was reading it he stabbed him. Henry threw the knife into the assassin's face, exclaiming "Oh; the wicked monk! he has killed me! put him to death!" He was immediately killed, and his body quartered and burned. The king died the next day, and the murderer was declared a martyr by Bourgoing and other Roman Catholic prelates.

CLEMENT OF ALEXANDRIA. See CLEMENS, TITUS FLAVIUS, *ante*.

CLEMENTINES, a collection of papal decrees and constitutions published by pope Clement V. in 1313. They constitute five books and 52 titles in the *Corpus Juris Canonica*.

CLEOBULUS, one of the seven sages of Greece, the son of Evagoras, and a native of Lindus, over which town he was ruler. He was celebrated for strength and beauty of person, the wisdom of his sayings, the acuteness of his riddles, and the elegance of his lyrics. A letter of his inviting Solon to take refuge with him from Pisistratus indicates that C. was alive in 560 B.C. His son Cleobuline was quite as famous for riddles.

CLEOMBROTUS I., a son of Pausanias, and king of Sparta in 380 B.C. He was the leader of the army on several expeditions, but without remarkable success. In 371 he went against the Thebans, but was disastrously defeated by Epaminondas. C. was mortally wounded in this battle, which took place at Leuctra.

CLEOMENES I., King of Sparta about 519 B.C. He led a Spartan force to Athens in 510 to aid in the expulsion of Hippias; and he was afterwards called in to support the Athenian oligarchical party led by Isagoras against the party of Clisthenes. On a technical charge of pollution, he banished 7,000 families, and established a new constitution, transferring the old senate to 300 of the oligarchical party. He was soon afterwards forced to leave the city. He made another unsuccessful attempt to sustain Isagoras. When the Ionian colonies revolted from Persia, their leader, Aristagoras, came to seek aid from Sparta, and tried to bribe Cleomenes to join him, offering higher and higher sums, until Cleomenes' daughter, Gorgo (afterwards the wife of Leonidas), eight or nine years old, said, "Father, go away, or the stranger will corrupt you." During a local war between Sparta and Argos, Cleomenes, by a stratagem, defeated the Argive forces near Tiryns. Those who escaped from the battle took refuge in a sacred grove, which Cleomenes ordered to be set on fire, and 6,000 of the flower of Argive citizens perished in the flames, a loss from which Argos was long in recovering. Another legend is that Argos was defended against Cleomenes by the women of the city. In the later years of his life C. became insane, and was kept in confinement; but he prevailed upon a slave to bring him a knife, with which he killed himself.

CLEOMENES III., the last king of Sparta of the Agidæ, came to the throne in 240 B.C. He desired to restore the old constitution and discipline of Lycurgus, and also

to destroy the Achæan league. The league was defeated in a great battle at the foot of Mt. Lycæum. In Sparta, Cleomenes found active opponents in the ephors, but he crushed them by surrounding the hall in which they were feasting, and slaughtering them in a body. Then he established a new constitution, abolished the ephors, restoring the old prerogatives of the kings, making a re-distribution of lands, and extending the franchise. But in the war which ensued with the Achæan league he was defeated in the battle of Sellasia, 222 B.C., when the death-blow was given to the independence of Sparta. Cleomenes fled to Egypt, but came back some years later and headed an insurrection against the king. The plot failed, and Cleomenes committed suicide.

CLERC, LAURENT, 1785-1869; b. France; he was a deaf mute, and without the sense of smelling, having when an infant fallen into a fire, seriously burning his face and head. He was taught in the institution for the deaf and dumb in Paris, becoming the favorite pupil of the abbe Sicard, and after eight years of study became himself a teacher. In 1816, he came to the United States with the Rev. Dr. Gallaudet, and the next year the two opened an institution for the deaf and dumb in Hartford, Conn. Clerc was a teacher of deaf mutes for more than half a century. At the age of 34, he married Miss Boardman, a deaf mute, who brought him several children, all of whom had the sense of hearing and could speak. His oldest son became an Episcopal clergyman.

CLERK, in the middle ages, designated an ecclesiastic—the term indicating a man of science or of learning—extended at a later period to mean a complimentary title for men of learning, whether of the church or not. In modern times it indicates any one who makes and keeps records, public or private; but in the law it is still an appellation of the clergy. In the United States there is an official clerk to each house of congress, and to each house of a state legislature; also there are county, city, and town clerks, and others of lesser importance. In the law, the clerk is an important officer of any court. In mercantile and other business life there are almost innumerable varieties of clerks.

CLERMONT, a co. in s.w. Ohio, on the Ohio river, reached by the Marietta and Cincinnati, and the Cincinnati and Muskingum valley railroads; 462 sq.m.; pop. '70, 34,268. The soil is fertile; productions, wheat, corn, butter, wool, tobacco, etc. Co. seat, Batavia.

CLERMONT EN BEAUVOISIS (CLERMONT SUR OISE), a t. in France, 36 m. n. of Paris; pop. '72, 5,774. The town-hall, and church of St. Simon, date from the 13th c., and the hill on which the town is built is surmounted by an old castle of the 10th or 11th c., now transformed into a penitentiary for women. C. was an important post in the middle ages. It was frequently taken and retaken in the wars with the English, and in 1487 it was surrendered to them as a ransom for the French leader, La Hire. Cassini, the astronomer, was born here.

CLÉRY, JEAN BAPTISTE, 1759-1809; one of the devoted friends of Louis XVI., and one of the few attendants permitted to share his prison. A few days before the king's execution Louis shared a loaf of bread with C., that being the only proof of regard he was able to show him. C. published an account of the king's imprisonment.

CLÉSINGER, JEAN BAPTISTE AUGUSTE, b. 1820; a French sculptor who first became noted by his bust of Scribe. Among a great many works from his chisel are "Girl Bitten by a Serpent," "Liberty," "Fraternity," "Gypsy Girl," "Cleopatra in the Presence of Cæsar," statues of Louise of Savoy and Sappho; equestrian statues of Francis I. and Napoleon I. for the Louvre; busts of Charlotte Corday, the emperor of Russia, and the king of Prussia, for the Hotel de Ville. He married the daughter of the famous authoress, George Sand.

CLETHRA, a genus of shrubs of the order *ericaceæ*. It is the white alder or sweet pepperbush, found in all the states from Canada to the gulf. The flowers are white and fragrant.

CLEVELAND (*ante*), the second city of Ohio, on the southern shore of lake Erie, 170 m. w. of Buffalo, and 130 m. n. of Columbus, has grown to its present dimensions from a small town originally surveyed and settled in 1796 by gen. Moses Cleveland, one of the directors of the Connecticut land company, for whom it was named. It is the chief port of the "western reserve," and the capital of Cuyahoga county. It is divided into two parts connected with each other by bridges crossing the Cuyahoga river, which here empties into the lake. The harbor, which has been much improved by the national government, is one of the best on the lake. The most beautiful portion of the city lies upon a sandy bluff on the e. side of the river, from 60 to 150 ft. above the surface of the lake. The whole city is laid out with good taste, mostly in squares, the principal streets being from 80 to 120 ft. wide, and one having a width of 132 feet. Shade trees, the maple predominating, are so abundant that the place is properly called the "Forest city." Euclid avenue, lined with elegant private residences, each of which is surrounded with ample grounds, is acknowledged to be the handsomest street in the country. Superior street, having a width of 132 ft., is occupied by the banks and the

fashionable retail stores. Monumental park, in the center of the city, with an area of ten acres, as originally laid out, is now crossed by streets at right angles, and so divided into four smaller squares, beautifully shaded and carefully kept. In one of these squares is a handsome fountain, in another a pool and a cascade, and a statue of commodore Perry, the hero of the battle of lake Erie, erected in 1860 at a cost of \$8,000. West of the river is another finely shaded park, called the circle, with a beautiful fountain in the center. The city cemetery, on Erie street, contains many tasteful monuments; Woodlawn cemetery, on the eastern side of the city, is rich in monuments and statuary; Lake View cemetery, containing 300 acres, 5 m. from the city, is elevated 250 ft. above the level of the lake. Besides these there are the Roman Catholic and several smaller cemeteries. Water for the city is obtained by means of a tunnel under the lake, and is distributed from a reservoir on the highest elevation w. of the river. The principal public buildings are of stone, and present a fine appearance. The United States building contains the custom-house, post-office, and rooms for the federal courts. The co. court-house and city hall occupy conspicuous places, and are well adapted to their several uses. The house of correction is a large and handsome edifice, costing \$170,000. The C. medical college is an imposing structure, and the city infirmary, five stories high, cost \$25,000. The union railway station, a massive structure of stone, is one of the largest buildings of the kind in the world. The high schools and several of the churches are very handsome structures. The public library was opened in 1869 with 6,300 volumes, and contains 20,000 at the present time. It is supported by a tax of $\frac{1}{16}$ of a mill on the city valuation. The mercantile library has an endowment of \$23,000, and contains 10,500 volumes. There are several smaller libraries. Charity (St. Vincent's) hospital, opened in 1833, with a capacity for 200 patients, was built by private subscription. The city infirmary is maintained at an annual expense of \$14,000. In connection therewith is a farm, the annual products of which amount to more than \$10,000. The city hospital has no endowment, but enjoys an annual income of \$7,000 from donations and the rental of its beds. The foundling hospital is supported in the same way. The homeopathic hospital, founded by the faculty of the C. homeopathic college, provides for the wants of an increasing number of patients. The United States marine hospital, for the benefit of sailors, is supported by appropriation from congress and a small tax on the sailors of the C. district. The house for the aged poor, founded 1870 by the "little sisters of the poor," is supported by private charity. The house for working-women, founded 1830, owns its buildings and grounds, but has no other endowment. The Protestant orphan asylum, chartered 1853, has an endowment of \$50,000. St. Mary's female orphan asylum, founded 1851, and its tributary, St. Joseph, founded 1850, have but a small endowment. St. Vincent's male orphan asylum, founded 1852, has many inmates, but no endowment. Besides these, the Jewish orphan asylum, the Bethel home for the destitute, and the children's aid society, deserve mention as highly useful charities. The churches of the city number more than 100, 15 of which are Roman Catholic, and the rest divided in varying proportions between the several Protestant denominations. The Roman Catholics sustain two convents, and the evangelicai Protestants a young men's Christian association. The public schools are well organized and efficiently managed. The seminary for women is a flourishing institution, so also is the union business college. The Roman Catholics have 11 academies and schools. The state law college has a library of 2,500 volumes and a considerable number of students. The C. medical college (attached to the university of Wooster) was organized in 1843, and graduates annually a large number of students. The homeopathic medical college, founded in 1849, is flourishing. C. contains 6 national banks, with an aggregate capital of more than \$4,000,000, 2 savings banks, 9 insurance companies, 3 markets, and more than 30 hotels. Five or six great lines of railroad center here, and the Ohio canal connects lake Erie at this point with the Ohio river. It was this canal, completed in 1834, that first gave a great impetus to the commerce of the city. Seven street railway companies connect all parts of the city with one another. Numerous steamers ply between C. and all other ports on the lake. The manufacturing industries of the city are varied and extensive, and increasing with great rapidity. They embrace iron, coal, refined petroleum, sulphuric acid, wooden ware, agricultural implements, sewing machines, railroad cars, marble, white lead, etc. The capital invested in these and other manufactures is estimated at upwards of \$20,000,000. In 1873, the wages paid to laborers in the more than 300 manufacturing establishments amounted to about \$7,500,000. The assessed valuation of the city in 1873 was \$65,000,000. The pop. of C. at different periods was as follows: 1810, 57; 1820, 350; 1830, 1000; 1840, 6,071; 1850, 17,034; 1860, 43,417; 1870, 93,018; 1880, 159,404.

CLEVELAND, CHARLES DEXTER, 1802-69; a native of Massachusetts, graduated at Dartmouth in 1827; professor of Latin and Greek at Dickinson college, and of Latin in the university of the city of New York. In 1861, he was appointed U. S. consul at Cardiff, Wales. Among his publications are *The Moral Characters of Theophrastus*; *Compendium of Grecian Antiquities*; *Compendium of Grecian Literature*; *Hymns for Schools*; *English Literature of the Nineteenth Century*; *Compendium of American Literature*; *Compendium of Classical Literature*; and *Lyra Americana*.

CLEVENGER, SHOBAI VAIL, 1812-43; a native of Ohio, who when young worked at stone-cutting, from which he rose to be a sculptor of more than ordinary merit. After making busts of Webster, Clay, and others, he went to Florence, and was rapidly advancing when consumption attacked him, and he died at sea on a homeward voyage.

CLIFTON, a t. in Ontario, Canada, on the Niagara river, a m. below the falls; pop. about 3,500. It has a large trade with the United States, and is an important station on the Great Western, and Erie and Michigan railways. Its situation near the falls attracts to it a great number of tourists.

CLIMBING FERN, *Hygodium palmatum*, a species of fern found, rarely, from Massachusetts to Virginia and Kentucky, remarkable for climbing or twining around weeds and shrubs. The leaves are broadly palmate, and the fertile frondlets form a panicle upon the upper portion of the stem. It is prized for interior decoration of houses.

CLINCH, a co. in s.e. Georgia, on the Florida border, intersected by the Little Suwannee river and the Atlantic and Gulf railroad; 1000 sq.m.; pop. '70, 3,945-507 colored. It is a level and swampy region; chief productions, rice, corn, cotton, oats, etc. Co. seat, Magnolia.

CLINCH RIVER, rising in s.w. Virginia, flows into Tennessee between Clinch and Powell mountains, joining with the Holston, and forming the Tennessee. Its length is about 200 miles.

CLINGMAN, THOMAS LANIER, b. N. C., 1812; graduated from the university of North Carolina in 1832; practiced law, and was elected a member of the state legislature and of congress. In 1858, he was appointed to fill a vacancy in the U. S. senate. In the rebellion he sided with the confederacy, was expelled from the senate, and served as a col. in the confederate army.

CLINGMAN'S DOME, the highest peak of the Smoky mountains in North Carolina on the border of Tennessee. It is 6,600 ft. above the sea level; and is the second highest of the Appalachians.

CLINTON, a co. in s.w. Illinois, on Kaskaskia river, intersected by the Ohio and Mississippi and the Illinois Central railroads, 420 sq.m.; pop. '70, 16,285. It consists of fertile prairies with tracts of forest land. Productions chiefly agricultural. Co. seat, Carlyle.

CLINTON, a co. in central Indiana, reached by the Indianapolis, Cincinnati, and Lafayette railroad; 432 sq.m.; pop. '70, 17,330. Its surface is mostly of forest and prairie lands; chief business, agriculture. Co. seat, Frankfort.

CLINTON, a co. in e. Iowa, on the Mississippi river, intersected by the Chicago and North-western railroad; 693 sq.m.; pop. '70, 35,357. It has a surface of prairie and forest, with generally fertile soil, producing the usual agricultural crops. Co. seat, De Witt.

CLINTON, a co. in s. Kentucky, on the border of Tennessee, bounded n. by the Cumberland river; 350 sq.m.; pop. '70, 6,497-292 colored. The surface is hilly, and in some parts mountainous. Agriculture is the chief business. Co. seat, Albany.

CLINTON, a co. in central Michigan, on Grand, Maple, and Looking-glass rivers, reached by the Detroit, Lansing, and Lake Michigan, the Jackson, Lansing, and Saginaw, and the Detroit and Milwaukee railroads. The chief business of the people is agriculture. Co. seat, De Witt.

CLINTON, a co. in n.w. Missouri, reached by the Hannibal and St. Joseph, the Cameron and Kansas City, and a branch of the North Missouri railroads; 460 sq.m.; pop. '70, 14,063-683 colored. The surface is chiefly prairie, but there is plenty of woodland. Productions agricultural. Co. seat, Plattsburg.

CLINTON, a co. in n.e. New York, on the Canada border, bounded e. by lake Champlain, and s. by Ausable river, and traversed by the Vermont and Canada, the Montreal and Plattsburg, and the Whitehall and Plattsburg railroads; 952 sq.m.; pop. '75, 20,736. The soil is fertile, level near the lake, and hilly further inland. There is abundance of iron ore of the best quality. Chief productions, wheat, corn, oats, buckwheat, hay, butter, wool, and maple sugar. The Clinton state prison is at Dannemora, in this county. Co. seat, Plattsburg.

CLINTON, a co. in s.w. Ohio, traversed by the Cincinnati and Muskingum Valley, and the Marietta and Cincinnati railroads; 467 sq.m.; pop. '70, 21,914. Surface undulating, and soil fertile. The chief business is agriculture. Co. seat, Wilmington.

CLINTON, a co. in central Pennsylvania, on the Susquehanna river, traversed by the West Branch canal, the Philadelphia and Erie, and a division of the Pennsylvania Central railroads. Surface mountainous; chief occupations, agriculture and lumbering. Co. seat, Lock Haven.

CLINTON, a city in Clinton co., Iowa, on the Mississippi river, 42 m. above Davenport; pop. '70, 6,129. It is on the Chicago and North-western railroad, at the junction of several other railroads. The Mississippi is crossed at Clinton by a bridge 4,100 ft. long. In the city are the repair shops of the railroad, and a number of manufactories. It has a large and rapidly increasing trade.

CLINTON, the seat of justice of East Feliciana parish, La.; 85 m. n.w. of New Orleans; pop. '70, 930—207 colored. There is railroad communication with Port Hudson.

CLINTON, a t. in Worcester co., Mass., 32 m. w. of Boston, on the Nashua river; pop. '70, 5,429. The people are extensively engaged in manufacturing carpets, cotton and woolen goods, boots and shoes, etc. The Boston, Clinton, and Fitchburg, and the Worcester and Nashua railroads reach the village.

CLINTON, a t. in Hunterdon co., N. J., 31 m. n.w. of Trenton, on the s. branch of Raritan river, and the New Jersey Central railroad; pop. '70, 3,134; of the borough, 785. It is in the midst of a fine agricultural region, and has many important manufacturing factories.

CLINTON, a village in Oneida co., N. Y., on Oriskany creek and the Chenango canal, and the Utica and Binghamton railroad; pop. '70, 1,640. It is the seat of Hamilton college, and a place of important manufacturing business.

CLINTON, a village in Huron co., province of Ontario, Canada, 13 m. from Goderich, on a branch of the Grand Trunk railroad; pop. about 2000. Near the place are valuable salt wells, and a deposit of rock-salt 20 ft. thick. There are various manufacturing factories.

CLINTON, CHARLES, 1690—1773; a native of Ireland, and progenitor of the Clintons of New York, of whom his grandson De Witt was the most famous. The grandfather of Charles was an adherent of Charles I., and fled to the n. of Ireland on the fall of the king. After a voyage in which a number of the emigrants starved to death, C. landed at cape Cod in 1729, and in 1731 settled in Ulster co., N. Y., where he was a farmer, a land surveyor, and a judge of the local court. In 1756, with two of his sons, he served in the campaign against Fort Frontenac.

CLINTON, DE WITT (*ante*), 1769—1828; b. N. Y., was the son of James Clinton and Mary De Witt, and grandson of Charles the immigrant from Ireland. His paternal ancestors, although long resident in Ireland, were of English origin, and his mother was of Dutch-French blood. He was educated at Columbia college, graduating with high honors. Choosing the law for his vocation, he studied under Samuel Jones, afterwards chief justice of the United States superior court. Admitted to the bar in 1788, C. entered immediately into political life, becoming an ardent supporter of his uncle, George Clinton, who was governor of the state (from 1777 to 1795 and from 1801 to 1804), and the leader of the republican party. Young C. took an active interest in the adoption of the federal constitution, and reported for the press the proceedings of the convention held for that purpose; about the same time and afterwards acting as his uncle's private secretary. His first office was secretary of the board of regents of the university; and the next, secretary of the board of commissioners of state fortifications. He opposed the administration of John Adams, and also that of John Jay, governor of the state; but while opposing Adams's hostility to France, he raised and commanded an artillery company to resist the French in case war should come. In 1797, he was elected to the state assembly as a representative of New York city, where he made his residence, and the next year was chosen state senator for four years. By virtue of his senatorial office, C. became a member of the council of appointment, a body consisting of one senator from each district to whom the governor made nominations for state and local offices. Up to this time the governor had exercised the exclusive right to make nominations; but C. vigorously attacked the system, and succeeded in procuring an amendment to the constitution giving the members of the council of appointment equal rights of nomination with the governor. During this period C. found time to devote himself to scientific and social questions, studying natural history, and other sciences. The protection and improvement of the public health, and the enactment of laws in favor of agriculture, manufactures, and the arts, and especially the use of steam in navigation, engaged his restless mind. He labored also for the abolition of slavery, and of its kindred barbarism, imprisonment for debt. In 1799, when but 33 years of age, he was appointed a senator of the United States, where he greatly increased his popularity, particularly by his wise and moderate counsel in a high excitement then existing against Spain in consequence of alleged violation of treaty stipulations affecting the Mississippi and its trade. Before his term in the senate expired, C. resigned to accept the office of mayor of New York, an appointment made by his uncle, the governor, and the council of appointment. He held the mayor's office four years; was removed; again appointed in 1809; again removed in 1810; finally appointed in 1811, again holding four years, through the period of the war with England. He was also a member of the state senate from 1805 to 1811; lieutenant-governor for the next two years, and for part of this time again a member of the council of appointment. In 1804, his uncle, the governor, was elected vice-president of the United States, and soon afterwards, by reason of age, retired from political life, leaving the partisan scepter of the Clintons in the hands of De Witt, who speedily became the leader of the republican party in New York, and their candidate for president, near the close of Madison's first term. Madison, backed by his war record, was easily nominated by the republican congressional caucus; but the New York section of the party insisted on running Clinton. The result was a disastrous defeat for the latter, he having but 89 electoral votes to 128 for Madison. This severe blow led C.

to a temporary cessation of political work, and he turned his attention to less exciting subjects. His partisan opponents considered his political life at an end; but they were wrong. He took a leading part in establishing the free-school system of New York city, and in the establishment and promotion of various institutions of science; in the improvement and modification of criminal laws; in the extension of agriculture and manufactures; in the relief of the poor, the improvement of morals, and the advancement of all worthy objects. For many years no important movement was made in these and kindred matters with which he was not identified, and oftener than otherwise as the master spirit. All these, however, were little in comparison with the great object on which his fame securely rests—the Erie canal. He was an early and energetic advocate of internal improvements, especially such as could connect the great lakes by navigable channels with the tide-water of Hudson river, and no man so eloquently or so prophetically set forth the great advantages that such works would bring to New York city. How these prophecies have been fulfilled the position of that city as the commercial center of the two Americas will attest. It would require many pages to record with what zeal, tireless energy, patience, and hope, he labored for this great object. "Clinton's folly" was the by-word of scoffers through dark years of discouragement, but he never despaired, never yielded an inch, until, a dozen years after his great political defeat, a line of cannon stationed at intervals along the much ridiculed "ditch," and starting their firing at Buffalo, awakened the people of the "Empire State" to the fact that the waters of lake Erie were pouring through the canal, bearing on their waves the message that the great lakes were on that day wedded to the ocean. In the mean time he was never entirely out of the political field. In 1816, the governor (Daniel D. Tompkins) was chosen vice-president, and resigned the governorship. C. was brought forward for the place, bearing not only the odium of advocating the "big ditch" and of the crushing defeat as a presidential candidate four years before, but the additional ignominy of having been but one year before removed from the office of mayor of New York by a council of appointment controlled by his own party. To run for governor seemed madness, yet the innate power and greatness of the man gave him an easy victory, and he was elected by a heavy majority. He was re-elected in 1820, in 1824, and in 1826. In 1822, he was out of the field, and his enemies once more celebrated his political funeral, adding, in the course of their two years' rule, the indignity of removing him from the office of commissioner of the canal then under way. This outrage was more than the people could bear, and C. was at once brought forward for governor, running against Samuel Young. The disgraced canal commissioner was elected by 17,000 majority. He died suddenly in his chair while engaged in official duty at Albany. Among his published works are *Discourse before the New York Historical Society*; *Memoir on the Antiquities of Western New York*; *Letters on the Natural History and Internal Resources of New York*; *Speeches to the Legislature*; and many historical and scientific addresses.

CLINTON, GEORGE, 1739-1812; b. N. Y.; youngest son of Charles Clinton. His first noteworthy adventure was connected with privateering in the French war of 1763. He was an officer in the expedition against fort Frontenac, and after the war went into the law and politics. He was chosen to the colonial assembly and to the continental congress, was made brig.gen. in the revolutionary army, and in 1777 was elected first governor of the state of New York. He was re-elected, and occupied the executive chair in all for 18 successive years, and in 1800 was chosen for one more term, making 21 years as governor. In 1804, he was elected vice-president of the United States, holding the office until his death, or during all except 10½ months of Madison's two administrations.

CLINTON, Sir HENRY, 1738-95; grandson of Francis, sixth earl of Lincoln. Sir Henry was a maj.gen. of the British army in the American revolution, was in the battle of Bunker Hill, and took possession of New York after the defeat of Washington's forces in the battle of Long Island, Aug. 26, 1776. In 1778, he succeeded sir William Howe as commander-in-chief. He returned to England in 1782, and in 1793 he was made governor of Gibraltar, where he died.

CLINTON, JAMES, 1736-1812; b. N. Y.; fourth son of Charles the immigrant, and father of De Witt. He went into the English army, serving as a captain in the French war, distinguishing himself in the capture of fort Frontenac. In the revolution he took the side of the colonies, and was made brig.gen. He was wounded at the capture of fort Clinton by the British, but escaped with a part of the garrison across the Hudson river. He was engaged against the Indians in gen. Sullivan's Iroquois expedition, and was present at the siege of Yorktown and the surrender of Cornwallis, and at the evacuation of New York by the English. He was a delegate to the New York convention which adopted the federal constitution.

CLINTON STATE PRISON, in Clinton co., N. Y., in the t. of Dannemora; pop. of township, 75, 1863. The prison comprises a number of buildings inclosed in a stockade which surrounds 37 acres of land. This location was chosen for the purpose of employing convicts in the mining and manufacture of iron, there being abundance of that ore on the tract belonging to the prison, or to the state. It is also in a densely

wooded region, and the timber furnishes the charcoal used in the furnaces. The prison was begun in 1844.

CLISTHENES, or **CLEISTHENES**, an Athenian, grandson of the tyrant Sicyon, who, after the expulsion of Hippias from Athens, took the side of the common people against the would-be tyrant Isagoras, and effected some changes in the constitution which tended to increase the rights and privileges of citizens, his object being to destroy the old aristocracy. He is said to have been the first to introduce the punishment of ostracism, and the first to suffer from it. He was banished by the Athenians, and 700 families of his followers also were sent away; but Isagoras finally failed of his purpose, and Clisthenes and the banished families were recalled.

CLITUMNUS (now **CLITUMNO**), a small river in Umbria, Italy, celebrated for the clearness of its waters and the beauty of the cattle raised upon its banks. Its source is near Spoleto, and after a course of 9 m. it takes the name of Timia. It was once so famous that Caligula, Honorius, and other great people made special visits to its banks. Near the river was a grove of cypresses, and close above the water was a temple to Clitumnus, supposed to be the same now occupied as a Christian chapel. The white cattle peculiar to the valley of the Clitumnus were held in great demand for sacrifices to the gods.

CLITUS, or **CLEITUS**, foster-brother of Alexander the Great, who saved Alexander's life at the battle of Granicus 334 B.C. when, with a blow of his sword, he severed the arm of Spithridates which was stretched out to slay the king. He held high positions in Alexander's armies, and in 328 was made satrap of Bactria; but on the night before he was to leave for his satrapy a feast was given by Alexander in honor of the Dioscuri. Both the king and Clitus became excited with wine, and a wrangle ensued in which Alexander thrust him through with a spear and killed him.

CLOACINA, in Roman mythology, the goddess of sewers, mentioned in very early times. Piiny derives the name from a verb which meant to wash or purify. (See **CLOACA MAXIMA**, *ante*.)

CLOCKS, CURIOUS. Among remarkable clocks, one of the best known is that in the Strasbourg cathedral. Another, illustrating the elaborateness to which clock-work is sometimes carried, was placed on exhibition in New York in the summer of 1880. It is the work of Felix Meier, who spent more than 10 years on its construction. It is 18 ft. high, 8 wide, and 5 deep. It has 2,000 wheels, runs by 700-lb. weights, and is wound up once in 12 days. Above the main body of the clock is a marble dome, upon which Washington sits in his chair of state, protected by a canopy which is surmounted by a gilded statue of Columbia; on either side of Washington is a servant in livery, guarding the doors, which open between the pillars that support the canopy; on the four corners of the main body of the clock are black walnut niches; one of the niches contains the figure of an infant, the second the figure of a youth, the third of a man in middle life, the fourth of an aged graybeard, and still another, directly over the center, contains a skeleton, representing father Time. All of these figures have bells and hammers in their hands. The infant's bell is small and sweet-toned; the youth's bell larger and harsher; the bell of manhood strong and resonant; that of old age diminishing in strength, and the bell of the skeleton deep and sad. A figure of William C. Bryant, and another of prof. Morse rest upon the pillars that support the planetary system. The astronomical and mathematical calculation, if kept up, would show the correct movement of the planets for 200 years, leap years included. When the clock is in operation it shows local time in hours, minutes, and seconds; the difference in time at Chicago, Washington, San Francisco, Melbourne, Pekin, Cairo, Constantinople, St. Petersburg, Vienna, London, Berlin, and Paris; the day of the week, calendar day of the month, month of the year, and seasons of the year, the signs of the zodiac, the revolutions of the earth on its own axis, and also around the sun; the revolutions of the moon around the earth, and with it around the sun; also, the moon's changes from the quarter to half, three-quarters, and full; the correct movement of the planets around the sun, comprising Mercury, which makes the revolution once in 88 days; Venus, once in 224 days; Mars, once in 686 days; Vesta, once in 1,327 days; Juno, once in 1,593 days; Ceres, once in 1,631 days; Jupiter, once in 4,332 days; Saturn, once in 10,758 days; Uranus, once in 30,638 days. There is, therefore, a movement in this wonderful piece of machinery which cannot regularly be repeated more than once in 84 years. But the inventor has a crank attachment to the clock, by means of which he can hasten the working of the machinery, in order to show its movements to the public. By turning continuously 12 hours a day, for 16 days and 8 hours, a perfect revolution of the planet Uranus around the sun would be made. At the end of every quarter hour the infant in his carved niche strikes with a tiny hammer upon the bell which he holds in his hand. At the end of each half hour the youth strikes; at the end of three-quarters of an hour the man, and at the end of each hour the graybeard, death then follows with a measured stroke to toll the hour. A large music box, manufactured at Geneva expressly for this clock, begins to play at the same time that the skeleton strikes the hour, and a surprising scene is enacted upon the platform beneath the canopy. Washington slowly rises from his chair to his feet, extending his right hand, presenting the declaration of

independence; the door on the left is opened by the servant, admitting all the presidents from Washington's time, including president Hayes. Each president is dressed in the costume of his time. Passing in file before Washington, they face and raise their hands as they approach him, and walking naturally across the platform disappear through the opposite door, which is promptly closed behind them by the second servant. Washington retires into his chair, and all is quiet, save the measured tick of the huge pendulum, and the ringing of the quarter hours, until another hour has passed.

CLODIUS PULCHER, **PUBLIUS**, (real name, **PUBLIUS CLAUDIUS PULCHER**), appears in history, 70 B.C., serving under Lucullus in Asia, and in civil affairs in 69, when he impeached Catiline for extortion in Africa; but Catiline bribed the accuser and escaped. Clodius appears to have been avaricious and unscrupulous. Near the close of the year 62, Clodius was said to have had an intrigue with Pompeia, wife of Julius Cæsar, on the occasion of the celebration of the Bona Dea in Cæsar's house. Clodius was tried for violation of the sacred mysteries, but was acquitted, it was charged because he had bribed the judge. He was elected tribune in 59, and one of his first acts was to exile Cicero, who had refused to defend him in the trial for sacrilege, but the great orator was soon afterwards recalled in spite of Clodius's opposition. He went on from bad to worse, gathering around him the worst elements of the people, until he became a candidate for the prætorship (53 B.C.) in opposition to Milo. Both candidates worked with the energy and recklessness supposed to be characteristic only of modern times. The contest was ended in an unexpected manner, Jan. 20, 52 B.C. Milo set out on a journey to Lannuvium. On the way he met Clodius, who was on his road to Rome. Both were accompanied by armed followers, but passed each other without disturbance. However, some of the men in the rear guard of each party began to quarrel, a fight followed, and Clodius was killed.

CLOQUET, **HIPPOLYTE**, 1787-1840; a physician of Paris distinguished as a teacher of anatomy. He wrote valuable works on descriptive and comparative anatomy, and on odors and the sense of smell. In his later days, he was afflicted with mental imbecility.

CLOQUET, **JULES GERMAIN**, b. 1790; brother of Hippolyte, and also a physician and surgeon; eminent especially in the latter science. He was for many years professor of surgery in the faculty of Paris. Among his works are one on the human anatomy, in three volumes, profusely illustrated; others are on hernia, on calculi, and diseases of the urinary organs; on the preparation of skeletons, on the lachrymal apparatus in serpents, and on the anatomy of intestinal worms. He made many new surgical instruments, and invented improved methods of performing operations. In 1860, he received the cross of the legion of honor, and in 1867 was made a baron.

CLOSSE, **RAPHAEL LAMBERT**, d. 1662; a Canadian pioneer famous for fighting Indians. He came from France in 1642, and was made serg. maj. of the garrison at Montreal. He had many severe contests with the aborigines, on one occasion engaging 300 Iroquois with only 34 men, killing 50 and wounding 37 of them, with the loss of only one man killed and one wounded. In 1655, he acted as governor of Montreal. He was killed in a fight with Indians in 1662.

CLOTHO, one of the three Moiræ, Parcæ, or Fates; daughter of Erebus and Nox, or of Jupiter and Themis. She was the youngest of the dreaded sisters, and her symbol was a distaff, from which she was supposed to spin the threads of mortal life. By some she is represented in a parti-colored robe, wearing a crown with seven points or stars.

CLOTILDA, **SAINT**, 475-545; a daughter of Chilperic, king of Burgundy, and wife of Clovis, king of the Franks. Her father, mother and brothers were murdered by Gundebald, her uncle, but he spared and educated her. He opposed her marriage with Clovis, but she eluded him and was wedded, and converted the Frank king to the Roman Catholic religion in 496. He avenged the murder of her family, and made Gundebald his tributary. After the death of Clovis, Clotilda persuaded her sons to renew the quarrel, and a war followed which ended with the union of Burgundy to the Frankish empire. Clotilda then retired to Tours, and practiced the austerities of a devotee until her death. She was buried in the church of St. Genevieve, which her husband had built in Paris, and was canonized a few years afterwards. During the revolution a devout abbe, fearing that her remains might be desecrated, had them exhumed and burnt, and the ashes are now in an urn in the church of St. Lcu. There is a statue of her in the Luxembourg, and a fine church in her honor was built in Paris a few years ago.

CLOUD, a co. in n. Kansas on Republican and Solomon rivers; 720 sq.m.; pop. 70, 2,323. The productions are almost entirely agricultural. Co. seat, Concordia.

CLOUGH, **ARTHUR HUGH**, 1819-61; the son of a cotton trader of Liverpool, who emigrated to Charleston in 1823. The boy went back to England in 1828, and was educated at Rugby and Oxford, becoming a tutor in Orreil college. He resigned in 1848, and in 1852 visited the United States, where he made the acquaintance of Emerson, Longfellow, and other literary men. On his return the next year, he was appointed examiner in the education office of the privy council. Afterwards he traveled in Europe, and was on a tour in Italy when he died suddenly of a fever. His poems are his prin-

cipal works. He revised Dryden's translation of Plutarch's *Lives*, and wrote a series of tales under the title *Mari Magno*.

CLOWES, JOHN, 1743-1831; an English clergyman, one of the first followers of Swedenborg in England. He translated the *Arcana Cœlestia*, and published *Restoration of the Pure Religion*, and two volumes of sermons.

CLOWES, WILLIAM, 1779-1847; the first English printer to use steam presses (in 1823). He was the printer and publisher of the *Penny Magazine* and the *Penny Cyclopædia*. The establishment founded by him in London is still one of the largest in England.

CLUNIACS, or CONGREGATION OF CLUNY, an order founded at Cluny, in France, in 909, by the Benedictines. It spread rapidly, and at one time had more than 2,000 convents. It was suppressed in 1790 by the constituent assembly. Among its great men were Gregory VII., Urban II., and Pascal II.

CLUNY, or CLUGNY, a t. in France, in the department of Saône-et-Loire, 12 m. n.w. of Micon; pop. 4,000. There is considerable agricultural trade, and manufactures of pottery, paper, etc. Its importance lies chiefly in its ancient architecture, including, besides the celebrated abbey, the church of Notre Dame, dating from the 13th c., the church of St. Marcel, with a beautiful spire; the ruins of St. Mayeul; portions of the ancient fortifications; and picturesque houses dating from the 12th c. and onward, all classed among the historical monuments of France. Before the erection of St. Peter's at Rome, the abbey church at Cluny was the largest building of its kind in Europe, being 650 ft. long by 130 wide. During the wars of the 16th c., the buildings were much damaged, and in the revolution (1793) a considerable number were demolished. Large restorations have been made; and now the abbot's palace contains a museum and a library, the cloisters are occupied by a school, and the site of the abbey church affords room for a government stud. The college of Cluny, founded in 1269, has disappeared.

CLUSERET, GUSTAVE PAUL, b. Paris, 1823; educated in the military school of St. Cyr; in 1843, made a maj. of the *garde mobile*, participating in the suppression of the insurrection in June of that year. He served in the Crimea, where he was wounded; and against the Kibyles in 1853; resigning his commission in 1858. In 1860, he joined Garibaldi's staff, and commanded the French legion. In 1862, he came to the United States, took service on gen. McClellan's staff, and afterwards served with Fremont. He became briggen. of volunteers in 1862, and two years afterwards resigned and became editor of a weekly paper in New York, advocating Fremont, and opposing Lincoln for a second term. He returned to France in 1867, but was expelled for certain publications concerning a great railway project in the United States in which some officers of the French government were interested. In the war with Germany, he opposed Louis Napoleon's government, and engaged in some unimportant insurrectionary attempts in Lyons and Marseilles. Under the commune he was made minister of war, but was suspected of treachery, and for a time imprisoned. He escaped to Switzerland on the downfall of the commune, and in 1872 was formally sentenced to death.

CLUSIUM. See CHIUSI, *ante*.

CLIVER, PHILIP, 1580-1623; a German, who traveled in Poland and other countries; first studied law, but forsook it for geography with Joseph Scaliger at Leyden for his teacher. He served two years in the army, visited England, where he married; passed some time in Scotland and France, and returned to Holland, where he published a number of works on geography, all relating to antiquity, except *Introductio in Universam Geographiam*.

CLYDE, a village in the t. of Galen, Wayne co., N. Y., on Clyde river, the Erie canal, and the N. Y. Central railroad, 38 m. w. of Syracuse; pop. about 2,500. It is a place of active trade, and has a considerable manufacturing industry.

CLYMER, GEORGE, 1739-1813; b. Philadelphia; one of the signers of the American declaration of independence. He was a member of the council of safety, and with four others was appointed to take the place of the Pennsylvania delegation in the continental congress which had refused to sign the declaration of independence. He filled various important positions, both military and civil, until the peace of 1783. Afterwards he was sent to the legislature, and in 1788, was a member of the convention that framed the U. S. constitution. He was also a member of the first federal congress, and held many honorable offices in Philadelphia.

CLYTIE, a water nymph in love with Apollo. Meeting with no return for her affection, she was changed to a sunflower. In that form she gazed upon Apollo (the sun), and hence the notion that this flower turns on its stalk as the sun moves along the sky, always presenting its full face to that luminary.

CNEPH, the name under which the Egyptians adore the creator of the world.

CNOSSUS, or GNOSUS, a city of Crete on the n. side of the island, 3 m. from the coast, said to have been founded by Minos, a traditional king of the island. Tradition says that Jupiter was born, married, and buried near Cnossus; and it is also said to have been the site of the labyrinth in which the Minotaur was confined. This fable may have arisen from the many intricate caverns in the region. The inhabitants were Dorians,

with Dorian manners, customs, and political institutions. With the other parts of the islands it finally became a Roman colony. Among its great men were Ænesidinus, the skeptic philosopher, and Chersiphron, the architect of the temple of Diana at Ephesus.

COACII-WHIP SNAKE, a serpent of the United States, having a long narrow head, small neck, long body, and a tail like the lash of a whip. It is sometimes more than two yards long. It is not venomous, but will defend itself with great courage by twining its long folds around an enemy. It lives on birds and small animals. Found only in the states of South Carolina, Georgia, and Florida.

COAHOMA, a co. in n.w. Mississippi, on the Mississippi river; 750 sq. m.; pop. '70, 7,144—5,381 colored. It is low and level, and much of the land is frequently inundated; but the soil is good, producing chiefly corn and cotton. Co. seat, Friar's point.

COAL (*ante*). In North America the carboniferous strata are divided by geologists into two principal groups: the lower or sub-carboniferous, which corresponds to the carboniferous limestone of Europe; and the carboniferous, which includes the millstone grit and the coal-measures. The first of these is about 5,000 ft. thick in Pennsylvania, consisting mainly of shales and sandstones; but in the Mississippi valley, in Illinois, Iowa, and Missouri, a considerable thickness of limestone is developed in this part of the series. In the former region some thin coal-seams are found, the relation between the two areas being in this respect similar to that of the carboniferous limestone in England to the coal-bearing formations of similar age in Scotland. The millstone grit forms a mass of sandstone and conglomerates from 1200 to 1400 ft. thick in e. Pennsylvania, but thins rapidly to the w., being only from 100 to 250 ft. thick in Ohio and Tennessee. In Arkansas the compact silicious rock known as novaculite, or Arkansas hone-stone, occurs in this member of the carboniferous series. The coal-measures proper occur in a very large part of the United States and Canada. First in importance is the Appalachian coal-field, covering about 60,000 sq. m. extending through parts of Pennsylvania, Ohio, Virginia, Kentucky, Tennessee, and Alabama. The maximum thickness of strata is from 2,500 to 3,000 ft.; 120 ft. near Pottsville, 62 ft. at Wilkesbarre, and 25 ft. at Pittsburg, showing a gradual diminution in a westward direction. The most persistent coal deposit is the Pittsburg seam, which is known over an area measuring 225 by 100 m., but with a thickness varying from 2 to 14 feet. The anthracite district of Pennsylvania occupies an area of about 650 sq. m. on the left bank of the Susquehanna. The strata between Pottsville and Wyoming, which belong to the lowest portion of the coal-measures, are probably about 3,000 ft. thick, but it is difficult to come at an exact estimate owing to the numerous folds and contortions. There are from 10 to 12 seams above 3 ft. in thickness; the principal one, known as the Mammoth or Baltimore vein, is 29 ft. thick at Wilkesbarre, and in some places exceeds even 60 feet. The Illinois and Missouri basin covers a considerable part of these states, as well as of Indiana, Kentucky, Iowa, Kansas, and Arkansas. Its area is estimated at 60,000 sq. m., the thickness varying from 600 ft. in Missouri to 3,000 ft. in w. Kentucky. The aggregate thickness of C. is about 70 feet. A good furnace C. is found in Indiana, the so-called block C. near Indianapolis, which, like the splint C. of Scotland and of Staffordshire, can be used in blast furnaces without coking. In Michigan a nearly circular area of coal-measures of about 5,000 sq. m. occurs in the lower peninsula between lakes Erie and Huron. The thickness is only 120 ft., and the C. is unimportant. There are also coal-bearing areas of less value in Texas and Rhode Island.

The carboniferous strata are largely developed in the e. provinces of the dominion of Canada, notably in New Brunswick and Nova Scotia. The lower carboniferous group here consists of about 6,000 ft. of red sandstones and green marls with thick beds of fossiliferous limestone, accompanied by gypsum. The overlying coal-measures, including the millstone grit, occupy an area estimated at 18,000 sq. miles. The whole thickness of this group in one place is about 14,750 ft., with 76 included coal-seams, together 45 ft. in thickness, which are contained in the middle division of the series. At Picton there are six seams, together measuring 80 ft. in thickness. The coal-measures in this area approach nearer to the great coal-fields of Europe in thickness than those of the other American carboniferous districts. Rocks of the carboniferous age occur in various places on both flanks of the Rocky mountains, and in the Arctic archipelago, but they have not been explored. Lignite-bearing strata of cretaceous and tertiary age occupy a considerable area in the central and western portions of North America, especially in the upper Missouri and Saskatchewan valleys, in Utah, Texas, California, Oregon, and Vancouver island. In the last locality for several years past, C. has been extensively mined near Nanaimo, on the e. coast, in strata of the cretaceous age. Tertiary lignites are worked in Bellingham bay, at Coosa bay in Oregon, and at monte Diablo near San Francisco. The lignite formations of the e. flank of the Rocky mountains, which are considered by Hayden to occupy a position between the cretaceous and the eocene tertiary strata, cover an area estimated at about 50,000 sq. m. within the United States, and extend n. into Canada and s. into Mexico.

In South America, coal, probably of the carboniferous age, is found in the Brazilian province of São Pedro, Rio Grande do Sul, Santa Catharina, and in the neighboring state of Uruguay. The largest area is that known as the Candiota coal-field, which is exposed for about 50 m. in the valley of the river of the same name. The sections

exposed show five seams from 9 to 25 ft. each, or in all about 65 ft. of coal. Other basins are known at San Sepé, and San Jeronima, on the Jacahabay river. The latter is the only point at which mines are worked, as the C., though thinner than that of other localities mentioned, is situated within the reach of navigable waters, needing a land carriage of only 8 m. to the river.

On the w. coast of South America cretaceous coal is worked at Lota in Chili, and at Sandy Point in the straits of Magellan. In Peru both secondary and carboniferous coal is known at various points in the interior, the former occupying a position on the first rise of the Andes, while the latter occurs in higher ground, and at a greater distance from the coast. Good coal is also found at many points in the Santa valley. Much of the Peruvian coal has undergone considerable disturbance and metamorphism subsequent to its deposition. At Porton, 45 m. e. of Truxillo, a ridge of coal-bearing sandstones has been changed into a hard quartzite, with an interstratified seam of anthracite in a nearly vertical position. The coal is remarkable as containing a large amount of sulphur.

The annual production of coal throughout the world was roughly estimated for 1874 at 260,000,000 tons, including about 17,000,000 tons of lignite and C. from formations newer than the coal-measures of Europe. Nearly one half of the total was raised in Great Britain. Excluding lignite the figures are as follows:

	Tons.		Tons.
Great Britain.....	125,000,000	Russia.....	1,000,000
United States.....	48,000,000	Spain.....	750,000
Germany.....	35,000,000	India.....	700,000
France.....	17,500,000	Other Europe.....	125,000
Belgium.....	17,000,000	British N. America.....	750,000
Austria.....	4,700,000	Chili.....	200,000
New S. Wales.....	1,300,000	Australia.....	50,000

In America the first C. discovered was by father Hennepin, near what is now Ottawa, Ill. The first mining of C. was in 1813, when five boat-loads of flinty C. were floated down the Lehigh river and sold in Philadelphia for \$21 per ton. The fuel of the period was almost entirely of wood, Liverpool C. being a rare luxury. As late as 1821 only 22,122 tons of C. (Liverpool) were imported into the United States. The first regular shipments of C. from the Pennsylvania mines began in 1820. The C. industry of Pennsylvania has reached enormous proportions, the annual product being valued at over \$50,000,000. Besides more than 20,000,000 tons of anthracite C. there are mined in Pennsylvania near 10,000,000 tons of bituminous C. per annum. Of bituminous C. the states of Ohio and Illinois produce the next most extensive yield, each about 3,000,000 tons annually. In 1870, there were 1566 collieries in the United States, employing 92,454 hands, and invested capital to the amount of \$110,000,000. In 1820, the total C. product of Pennsylvania was less than 2,000 tons. It is now more than 20,000,000 tons per annum. See ANTHRACITE.

COAN, TITUS, D.D., b. Conn., 1801; ordained a Congregational minister in Boston in 1833, and in that year made a trip of exploration to Patagonia, where he wished to establish a mission. Circumstances being unfavorable, he returned, but soon afterwards he went to the Sandwich islands and was stationed as a missionary at Hilo. Besides his work as a missionary he has published in the *American Journal of Science* and elsewhere many valuable papers on scientific subjects.

COASTING TRADE (*ante*). This trade in the United States is far more extensive than in any other country. Of the 38 states now in the union, 18 border on the Atlantic ocean and the gulf of Mexico, and two border on the Pacific, to which may be added the territory of Washington, and the enormous coast-line of the newly acquired territory of Alaska. There is an immense amount of coastwise trade, especially along the Atlantic and the gulf. In the time of the early settlements such trading was done in small shallops, sloops, and schooners, and there was very little of it. The introduction of steam-vessels made a great change, and the trade rapidly grew in importance. At the present time many hundreds of steamers and more hundreds of sailing craft are constantly plying from Maine to Texas, transferring the cotton, sugar, and rice of the southern to northern, and the lumber, grain, and manufactured goods of the northern to southern markets. The swift propeller brings the oranges and strawberries of Florida to Maine, and takes back the ice of the Penobscot. In summer, these coasting steamers do a large share of the passenger as well as trade traffic. The thoroughness of the coast survey, and the recent introduction of the weather service whereby mariners are duly forewarned of danger, have done much to prevent the disasters which were common not long ago, and even the dreaded cape Hatteras has lost much of its terror.

COAST-LINE, the ocean boundary of any continent, island, or section of land. Such lines vary in length with the amount of indentation by gulfs and bays. Europe has nearly 20,000 m. of coast-line; Africa, 15,000; Asia, 30,000; North America, 23,000, and South America, 15,000.

COAST RANGE, or COAST MOUNTAINS, in California, running in a course almost parallel with the ocean from near the boundary of Oregon into Lower California. The

range has a width of 30 to 40 m., and has numerous spurs which usually run toward the ocean. Between these are well-watered and exceedingly fertile valleys. The chief peaks of the range are San Bernardino, 11,000 ft.; Sierra, 8,700. The principal passes are from 600 to 3,700 ft. above sea level. The mountains are usually rocky and steep. Those near the sea are covered with timber, while those far inland are nearly bare.

COAST SURVEY, a scientific department of the government of the United States, established for the purpose of making geodetic and hydrographic surveys to determine the coast-line, and of making charts of harbors and tide-waters, and of the bottom of the ocean along the coast. It extends its observations to all parts of the globe, as may be thought serviceable to navigation; and it makes such other observations (as of the tides and currents, and of the nature of the sea and river bottoms) as will permit calculations of changes to be expected in the future. Its office is also to indicate positions for the erection of light-houses and all other useful signals, and to make various meteorological and other observations. The inception of the organization was contemplated in the message of president Jefferson to congress in 1807. An act was passed authorizing him to cause a survey of the coasts of the United States, including islands, shoals, and places of anchorage within 20 leagues of the shore, and of St. George's Bank; and to take soundings and observations upon currents beyond such limits, to the gulf stream. This act appropriated \$50,000 for the object. Plans were requested from scientific men, and that proposed by Mr. F. R. Hassler, a native of Switzerland, was adopted. It was, in the first place, to determine the positions of certain prominent points of the coast by astronomical observations, and to connect them by trigonometrical lines from which to make a nautical survey; but nothing was done till 1811, when he went to Europe to obtain instruments and material for the work. He was, however, detained till the close of the war with Great Britain. On his return he was appointed superintendent of the coast survey, but did not begin active labors till 1817, when, in the vicinity of New York, he measured a base-line west of the Highlands on the Hudson, for the triangulation of New York harbor; but the work was not extended beyond this, for want of funds, except that a few detached surveys were made by the navy, and by the topographical engineers of the army. An interval of ten years elapsed, and in 1822, after a small appropriation had been made by congress, Mr. Hassler resumed the active duties of his office, and was authorized to employ, in addition to the naval and army officers designated for that service, such astronomers and other persons as he might deem necessary. He continued to superintend the survey till his death, in 1843. The work which he accomplished was to extend the survey at New York as far eastward as Point Judith, R. I., and as far s. as cape Henlopen, Del. The triangulation extended over an area of 9,000 sq. m., determining the positions of about 1200 stations, to be used in the delineation of about 1600 m. of shore line. Mr. Hassler was succeeded by prof. A. D. Bache. In 1845, surveys were begun on the coasts of Virginia and North Carolina, and during the next two years they were extended to Georgia and the gulf states, and afterwards to the Florida reefs and keys. Many observations on the gulf stream were taken during the time of the superintendency of prof. Bache, and extended observations were made upon the tides and currents in various rivers, for the purpose of deducing the laws by which they are governed. The magnetic force and direction in parts of the earth included in the survey were observed, and various meteorological observations were taken for the purpose of investigating the laws of storms. The rebellion interrupted the operations of the survey along the coast of the southern states, but many of the coast-survey officers were with the United States vessels, and their knowledge was of the utmost importance in naval operations. Two years after the close of the war, prof. Bache died (1867), and prof. Benjamin Pierce, of Harvard university, was appointed his successor. Since then a more comprehensive system has been prosecuted, extending across the continent; and the Pacific coast has been the subject of extended triangulation, although still far from complete; and the hydrographic survey has been actively carried on. See **HYDROGRAPHY**, **GEODESY**, and **TRIANGULATION**.

COATZACOALCO, a river of Mexico rising in the Sierra Madre, flowing partially across the isthmus of Tehuantepec, and emptying into the gulf of Mexico. This river, and the region around, have been several times explored with the view of constructing a canal across the isthmus from the gulf to the Pacific, the river being considered an important element in the work.

COBB, a co. in n.w. Georgia on the Chattahoochee river, intersected by the Western and Atlantic railroads; 529 sq. m.; pop. '70, 13,814—3,217 colored. Surface hilly and in part mountainous, soil fertile. Gold has been found. The main products are wheat, corn, cotton, and butter. Co. seat, Marietta.

COBB, DAVID, 1748-1830; b. Mass.; graduated at Harvard, and became a physician. He was an officer in the revolutionary army, member of congress, judge of the common pleas, and lieutenant-governor of Massachusetts.

COBB, HOWELL, 1815-68; b. Ga., graduated at Franklin college, and admitted to the bar in 1836. In 1843, he was sent to congress, where he served until 1851. In 1849, he was elected speaker of the house. He was one of the leaders of the southern party in congress, and favored the extension of slavery into the territory acquired from Mexico.

In 1851, he was chosen governor of Georgia, and again to congress in 1855. He was secretary of state in Buchanan's cabinet, resigning Dec., 1860, to join the south in the approaching war. He was the first president of the confederate congress, and afterwards a maj.gen., but made no military reputation.

COBB, SYLVANUS, D.D., 1790-1836; b. Me.; a minister in the Universalist church. He edited a newspaper for 20 years, and wrote a *Commentary on the New Testament*, and other works. His name is more widely known through the literary work of his son Sylvanus, b. 1823, a prolific writer of tales and sketches for many years past.

COBBE, FRANCES POWER, 1822-80; an English authoress, a great-granddaughter of Charles Cobbe, archbishop of Dublin. She became interested in religious studies, and was for a long time a personal friend and admirer of Theodore Parker, editing the English edition of his works, and being with him at Florence in the last days of his life. She traveled in Italy and the east, giving her observations in the *The Cities of the Past*. Among her other works are *Studies New and Old of Ethical Subjects*; *Hours of Work and Play*; *Essay on Intuitive Morals*; *Religious Duty*; and *Darwinism in Morals, and other Essays*.

COBLEIGH, NELSON EBENEZER, D.D., LL.D., b. N. H., 1814; a graduate of Wesleyan university; professor in McKendree college, Ohio; in Lawrence university, Wis.; president of East Tennessee Wesleyan university; and editor of two Methodist newspapers, *Zion's Herald*, Boston, 1858, and the *Methodist Advocate*, Atlanta, Ga., 1872.

COBOURG, a t. in Canada, in Northumberland co., on lake Ontario and the Grand Trunk railroad; 60 m. n.e. of Toronto; pop. '71, 4,422. It is the seat of justice of both Durham and Northumberland. Victoria college is in this town.

COBURG FAMILY, a German ducal family dating from the 15th c., remarkable for alliances with the English and continental royal houses. Queen Victoria's mother was a sister of duke Ernest I. The first wife of Ernest's brother Leopold (king of Belgium) was a daughter of George IV. of England, and his second wife was a daughter of Louis Philippe. Albert, the son of Ernest I., was the husband of Victoria.

COCOLITHS and COCCOSPHERES, bodies called "bathybius" by Huxley. They are round, or nearly so, and adhere to gelatinous protoplasm found in submarine localities. Prof. Huxley divides the coccoliths into discoliths and cyatholiths, and describes the discoliths as "oval discoidal bodies with a thick, strongly refracted rim, and a thinner central portion, the greater part of which is occupied by a slightly opaque cloud patch, corresponding to the inner edge of the rim, from which it is separated by a transparent zone;" usually they are concave on one side and convex on the other, the rim being raised on the convex side. In diameter they are one five-thousandth of an inch. The cyatholiths are a little larger, and of the shape of minute studs or buttons. Coccospheres are either compact or loose in texture, and vary from a thirteen-hundredth to the 750th of an inch in diameter. Dr. Wallich thinks that the coccospheres are the progenitors of the coccoliths; and both are the calcareous parts of bathybius. They are found fossil in chalk.

COCHIMI, a tribe or race of Indians in the peninsula of lower California, still in the lowest stages of savage life. They say their ancestors were driven southward by other Indian nations after a general war. The Jesuits established missions among them early in the 18th c., but the missions were suspended after the expulsion of the order.

COCHITUATE LAKE, in Middlesex co., Mass., 17 m. s. of Boston, covering a little more than 1 sq.m., whence Boston draws its supply of water.

COCHRANE, JOHN DUNDAS, 1780-1825; an English sailor and traveler. In 1820, he laid before the admiralty a plan for exploring the river Niger, but it was rejected. In Feb., 1820, he started from London on a journey around the world, to be performed as far as possible on foot. After much suffering he made his way through Russia and Siberia to Petropulowski, in Kamtchatka. There he married the daughter of a sexton, and abandoned the idea of crossing North America. Returning to London by the same route over which he had passed, he published a *Narrative of a Pedestrian Journey through Russia and Siberia to Tartary from the Frontier of China to the Frozen Sea and Kamtchatka*. He died while making a tour in South America.

COCKBURN, SIR ALEXANDER JAMES EDMUND, b. 1802; son of Alexander Cockburn who was English minister in Colombia. He was educated at Cambridge, and called to the bar in 1829. In 1841, he was made a queen's counsel, and in 1847 was elected to parliament from Southampton, where he distinguished himself (1850) by defending Palmerston's foreign policy. He was soon afterwards appointed solicitor-general, and in 1851, promoted to attorney-general. In 1854, he was made recorder of Bristol; in 1855 appointed justice of the common pleas, and in 1859 he became lord chief justice of England. In 1871, he was made English arbitrator for the settlement of the Alabama claims. He differed with his colleagues at Geneva, refusing to sign the award. In 1878, he was chairman of the Cambridge university commission.

COCKBURN, ALISON, (Mrs.), 1712-94; author of one of the most delightful Scotch ballads, known as *The Flowers of the Forest*. She was the daughter of a border laird, and had little education, and was fond of rambling around the country. The song is gener-

ally believed to have been written after the departure for London of one John Aikman, an early lover. In 1731, she was married to Patrick Cockburn, of Ormiston, an advocate. She subsequently became acquainted with all the celebrities of the day. She was one of the belles of Edinburgh, a graceful dancer, an indefatigable letter writer and composer of parodies, squibs, toasts, and character sketches. She was a relative of Walter Scott's mother.

COCKBURN, CATHERINE, 1679-1749; an English authoress, wife of a non-juring clergyman who finally conformed and received a living in Cumberland. She wrote *A Defence of Locke's Essay on the Understanding*, besides plays, poems, and essays.

COCKBURN, SIR GEORGE, 1772-1853; an English naval officer whose operations against Martinique secured that island to Great Britain. He was active in the war with the United States in 1812-15, marauding along the shores of the Chesapeake and burning the public buildings at Washington. His last noteworthy sea employment was to convey Napoleon to St. Helena. He rose to the rank of admiral, was several times returned to the house of commons, and was one of the lords of the admiralty.

COCKE, a co. in e. Tennessee, bordering on North Carolina, traversed by the Cincinnati, Cumberland Gap and Charleston railroad, and watered by French Broad and Big Pigeon rivers; 270 s. m.; pop. '70, 12,453-1274 colored. Surface mountainous and well wooded; productions, agricultural. Co. seat, Newport.

COCKERELL, CHARLES ROBERT, 1788-1863; an English architect who visited Greece, Italy, and Asia Minor to study ancient architectural remains, making excavations at Ægina and other places, and enriching the British museum with many rare and valuable fragments. He became a member of the royal academy, and a professor of architecture, his lectures on which were highly esteemed. He was the designer of many public buildings in London, Cambridge, Liverpool, and other places, and was the author of several works on his favorite theme.

COCKERILL, JOHN, 1790-1840; an English engineer, who established at Seraing one of the largest machine-shops in Europe, half of it being owned by the king of Holland. He often had 2,000 men employed at one time. In 1839, he failed.

COCLES, HORATIUS, "the one-eyed," one of the mythical heroes of ancient Rome, who, aided by Lartius and Herminius, defended the Sublician bridge against a great army under Lars Porsena, keeping the enemy at bay until the Romans behind them destroyed the bridge. When the bridge was about to fall, Cocles sent his two companies back; and when it had fallen, sheathing his sword and praying the river to favor him, he plunged in and swam safely to the shore. He was given as much land as he could draw a plow around in a day, and a statue in the comitium. No hero was held in higher honor, and Roman writers never wearied of telling what Macaulay repeats in his spirited *Lays of Ancient Rome*, "How well Horatius kept the bridge, in the brave days of old."

COCOA-PLUM, an edible fruit growing on a shrub of the order *rosaceæ*, in the West Indies, and some of the s.w. United States. It is yellow, purple, or black, and is much like a large plum in appearance.

COCO-MARICOPAS, or MARICOPAS, a tribe of Indians, in New Mexico, on the Gila river, occupying the same territory with the Pinos, who are advanced in civilization to a like extent. The joint reservation is about 25 m. long and 4 m. wide. Both tribes are cultivators of the soil, and raise large crops. They live in villages of 20 to 50 houses, usually surrounded by gardens and cultivated fields. Their houses are built of corn husks and straw, and are supported by stakes. Attached to each house is an open booth or wigwam where they pass their time in fair weather. Each family has also a granary or storehouse; and they have horned cattle, horses, and mules. Their food is chiefly bread, made of flour and corn meal, and vegetables. They raise cotton, and make good cloth therefrom. Their basket work and pottery also are good. The women wear simply a long strip of cotton cloth wound around the loins, and sandals made of raw hide on the feet. Their heads are bare, and the hair is left to hang freely down the back. Except for a breech cloth the men go naked, but in cool weather use blankets. The hair is never cut except over the eyes, and there it is "langed," as the style is called in these days. They believe in a great spirit, and in an existence after death, and avoid polygamy. They say that their souls will go to the banks of the Colorado, the dwelling place of their ancestors, and there be changed into various animals or birds, and also that feuds with other tribes will continue in the future existence. Their language is allied to that of the Yumas of Colorado. There is little doubt that they are descended from the strange people who left such remarkable cities and fortifications in that part of America. At the last census they numbered only 382 persons.

CODDINGTON, WILLIAM, 1601-78; a native of Lincolnshire, Eng., and founder of the colony of Rhode Island. He came out in 1630 with a commission as magistrate, landing at Salem, and was for some time a trader in Boston. He undertook the defense of Ann Hutchinson, and opposed similar persecution in other cases, but without success. April 26, 1633, he, with eighteen others, removed to the island of Aquidneck and founded a colony, which was to be judged and guided by the laws of Christ. He was elected judge and governor in 1640, and held the office until the colony was incorpo-

rated in the charter with Providence plantations. In 1651, he went to England, where he was granted a commission as governor of Aquidneck island, independent of the remainder of the colony, but he never undertook to exercise the authority, and soon resigned. In 1674, he was once more made governor.

CODE (*ante*) is defined in the United States as a body of laws established by the legislative authority of the state, and designed to regulate completely, so far as a statute may, the subjects to which it relates. The earliest and most complete code of the American states is that of Louisiana, finished in 1824, the work of Edward Livingston, a member of the celebrated family of that name in New York, and was based on the code Napoléonienne. It has 3,522 articles in one series, but comprises three books—1. of Persons; 2. of Things, and the Modification of Property; 3. of the Different Modes of Acquiring Property. A code was completed in Massachusetts in 1835, and it was revised 20 years later. New York's first code formed the revised statutes of 1830. There have been various more or less complete revisions, and there is the whole or a part of a further revision now before the legislature. All except the latest new states have compilations of codified editions of their laws. David Dudley Field of New York has been active and eminent in the work of codification. See FIELD, DAVID DUDLEY.

CODÉIA, an alkaloid existing in opium with meconis acid; formula, $C_{35}H_{12}ONO_5$. It is insoluble in alkaline solutions, but soluble in ether, alcohol, or water.

CODÉX (*ante*), originally the Roman name for the trunk of a tree, and also applied to the smooth tablets smeared with wax on which the Romans wrote their records. It finally came to mean any written document, but especially designating collections of laws. Modern scholars give the title to versions of the Scriptures, and sometimes to important secular manuscripts (see CODE, *ante*, for some of these codices; and also under their several names, such as ALEXANDRIAN CODEX, etc.).

CODÉX ALEXANDRINUS. See ALEXANDRIAN CODEX, *ante*.

CODÉX BEZÆ, or **CODÉX CANTABRIGIENSIS**, a manuscript believed to have been written in the 6th c., containing the four gospels and the Acts in Greek and Latin on opposite pages. It was found in a monastery at Lyons, France, and presented to Cambridge university in 1581 by Theodore Beza.

CODÉX EPHRÆMI, a palimpsest manuscript of portions of the Greek Bible preserved in the national library in Paris. It is judged to be as old as the 5th c., and in critical authority it ranks next to the Sinaitic, Vatican, and Alexandrian manuscripts.

CODÉX SINAITICUS. See SINAITIC CODEX.

CODÉX VATICANUS. See VATICAN CODEX.

CŒLENTERA, a group of animals including the classes hydrozoa, anthrozoa, and ctenophora. See ACTINIA, CORAL, and HYDROZOA, *ante*.

COEN, JAN PIETERSZON, 1587–1630; the founder of Batavia, the capital of the Dutch East Indies. He went to India in 1607 on a commercial exploration, and in 1612 made his second voyage with two ships. The next year he was appointed director-general of the Indian trade, and in 1619 he destroyed the native town of Jacatra and founded Batavia on its site.

CŒUR, JACQUES, d. 1456; a native of Bourges, France, who opened trade between his country and the states of the Levant. In 1436, Charles VII. made him master of the mint just established in Paris, and in 1440 his family were ennobled. In 1444, he was sent as one of the royal commissioners to preside over the new parliament of Languedoc, and in 1448 he represented the French king at the court of Nicholas V., who treated him with great distinction, lodging him in the papal palace, and granted him a special license to traffic with the infidels. The power and fame of C. were now at their highest. He had represented France in three embassies, and had furnished the sinews of the war that had driven the English from Normandy. He was invested with various offices of dignity, and possessed the largest fortune ever amassed by a private French citizen. The sea was covered with his ships; he had 300 factors in his employ, and houses of business in all the chief cities of France. He had built hotels and chapels, and had founded colleges in Paris, at Montpellier, and Bourges. Dealing in all things—money and arms, poetry and jewels, brocades and woolens—broker, banker, farmer—he had absorbed all the trade of the country, and merchant's complained that they could make no gains on account of "that Jacques." Very soon, however, he was a broken man and a fugitive. Charles was surrounded with the great merchants; he was as unstable as water, and always needy. C. had to go the way of others who had been the friends of the king. In Feb., 1449, Agnes Sorel, the king's mistress, died of puerperal fever. But it was charged that Louis (the dauphin) had procured her death; and a considerable time after she died, C., who was one of her executors, was accused of having poisoned her. There was not even a pretext for such a charge; nevertheless, the needy and unscrupulous king, in July, 1451, ordered his arrest and the seizure of his goods, reserving for himself a large sum to carry on the war in Guienne. He was tried and convicted by men whose business it was to convict him without regard to the evidence or to justice; and he was condemned to do public penance, to pay to the king a sum equal to \$5,000,000 of modern money, and to remain a prisoner until the judgment was fully satisfied. All

his property was confiscated, and he was subject to exile during the royal pleasure. In 1455, he managed to escape into Provence, and, though closely pursued, succeeded in reaching Rome, where he was well received by the pope, who was fitting out an expedition against the Turks. C. was given the command of 16 galleys, but he was taken ill at Caloz, died, and was buried on the island.

COFFEE, a co. in s.e. Alabama, watered by Pea river and its tributaries; original area, 900 sq.m.; pop. '70, 6,171—1020 colored. Surface hilly, and soil for the most part poor, with abundance of pine timber. Productions, agricultural. Co. seat, Elba.

COFFEE, a co. in s.w. Georgia, between the Ocmulgee and the Allapaha rivers, reached by the Macon and Brunswick, and the Brunswick and Albany railroads; 1000 sq.m.; pop. '70, 3,192—673 colored. It has a level and sandy surface, producing corn, oats, rice, cotton, etc. Co. seat, Douglas.

COFFEE, a co. in central Tennessee, intersected by the McMinnville and Manchester railroad; 320 sq.m.; pop. '70, 10,237—1,501 colored. Surface hilly, and soil fertile; producing wheat, corn, cotton, etc. Co. seat, Manchester.

COFFEY, a co. in s.e. Kansas, intersected by the Neosho river, and traversed by the Missouri, Kansas, and Texas railroad. The business is almost exclusively agricultural. Co. seat, Burlington.

COFFIN, Sir ISAAC, 1759—1839; b. Mass.; went into the British naval service in 1773, and rose through all grades to admiral. In 1818, he was elected to parliament, where he remained until 1826. In the latter year, he founded a school in Nantucket, which is still called by his name; indeed, the name was once almost a common noun in that island, so numerous were the families that owned it.

COFFIN, JAMES HENRY, LL.D., 1806—73; b. Mass., and graduated from Amherst college in 1833; was professor in Williams college, and superintended the erection of the observatory on Greylock mountain. From 1846 until his death, he was professor of mathematics and astronomy in Lafayette college, at Easton, Penn. Among his publications are *Solar and Lunar Eclipses*; *A Discussion on the Meteoric Fire Ball*; and *Winds of the Northern Hemisphere*.

COFFIN, JOHN H. C., b. Maine, 1815; a graduate of Bowdoin college; in 1836, appointed professor of mathematics in the U. S. navy. In 1844, he was detailed to the naval observatory, and from 1866 has been in charge of the *American Ephemeris and Nautical Almanac*.

COGHETTI, FRANCESCO, b. 1804; an Italian painter who has executed many fine altar pieces in the churches of Bergamo and elsewhere. He painted for the villa Torlonia the exploits of Alexander the great. He is recognized as the head of a modern school who strive to restore the classical styles of painting.

COGNIARD, THÉODORE, 1806—72; a dramatist of Paris, who, with his brother, Hippolyte, wrote a great number of fairy plays, vaudevilles, and other light pieces, which were unusually successful. Some of them are *La Biche aux Bois*; *Belle Héloène*; *Barbebleue*; *Perichole*; and the *Grande Duchesse*.

COGNO'MEN, equivalent to family name or surname. A Roman of any social position ordinarily had three names, the last being his C. and the name by which his family was known. In Marcus Tullius Cicero, the first name is the *præ-nomen*, the second the *nomen*, and the third denoted the family, or *gens*.

COGSWELL, JOSEPH GREEN, LL.D., 1787—1871; b. Mass.; graduate of Harvard in 1803. He studied law with Fisher Ames, but did not continue its practice, preferring to be a tutor at Cambridge. In 1816, with George Ticknor and Edward Everett, he traveled in Europe, where he paid special attention to the methods and principles of instruction. In 1820 he was made professor of mineralogy and geology, and librarian of Harvard college. In 1823, with George Bancroft, he founded the Round Hill school at Northampton, Mass. About 1839, he settled in New York, where he was employed by John Jacob Astor, and became chief adviser of the millionaire in establishing the Astor library, one of the most valuable collections in the country. Under C.'s superintendence the library took form and grew up to completeness, and he remained its leading spirit as long as his health would permit, retiring from the superintendence in 1863.

CONASSET, a t. in Norfolk co., Mass., 15 m. s.e. of Boston, reached by the South Shore railroad; pop. '70, 2,131. The township borders on Massachusetts bay and on Plymouth county. Northward from C., the peninsula of Nantasket stretches towards Boston harbor. The people of C. are engaged chiefly in the fishing and coasting trade. The original Indian name, Conohasset, means "fishing promontory."

CONHOES, a city in Albany co., N. Y., at the junction of the Mohawk and Hudson rivers and the e. terminus of the Erie canal, at its junction with the Champlain canal; reached by the Rensselaer and Saratoga and the Troy and Schenectady railroads, and from Albany by horse-railroad; pop. '75, 17,493. The city is furnished with unlimited water-power by the Mohawk, which here has a fall of 70 feet. A dam above the falls holds back the water, which is supplied to the mills and factories by canals. There are immense cotton-mills, woolen-mills, knitting-mills, rolling-mills, axe-factories, pin-fac-

ories, and many other branches of manufacturing industry. There are many fine churches in the city.

COIIOSH, the Indian name of black snake-root. It is regarded as a stimulating tonic, tending to diminish the force and frequency of the pulse. It is used to a great extent as a specific for rheumatism and cholera.

COIN (*ante*), money made of metal—in the United States, of gold, silver, nickel, and copper. In ante-revolutionary times, and before the adoption of the present constitution of the United States, the various colonies and states, so far as they found occasion, made their own coins, which afford interesting study for the numismatist. The coinage laws of the United States have undergone a variety of changes since 1792, when the first code was adopted. In 1873, an act was passed by congress consolidating the regulations governing the coinage of the country, in conformity with the advice of John Jay Knox, comptroller of the currency. Gold and silver, on account of their softness, require, when used for coins, to be hardened by alloy. The gold coins are made of metal consisting of 900 parts pure gold and 100 of alloy; the alloy being 1 part of silver and 9 of copper. Gold of this quality is called standard gold. Silver coins are hardened by the same proportion of copper. The gold dollar contains 25.8 grs. pure metal (the alloy not reckoned); the quarter-eagle (\$2.50), 64.5 grs.; the half-eagle (\$5), 129 grs.; the eagle (\$10), 258 grs.; and the double eagle (\$20), 516 grs. The gold coins are a legal tender to any amount. The silver coins are the "trade dollar" (coined especially for use in China and Japan, containing 420 grs. of silver); the dollar, 412½ grs.; the half-dollar (50c.), 12½ grams, or 191.9 grs.; the quarter-dollar (25c.), the dime (10c.), the half-dime (5c.), each of proportionate weight according to its relative value. The silver coins are a legal tender to any amount not exceeding \$5. The minor coins are composed of 95 per cent of copper and 5 per cent of tin and zinc. The five-cent nickel piece is 20 millimeters in diameter, and weighs 5 grams. The three-cent piece weighs 30 grs. the cent 48 grs. These are a legal tender for any amount not exceeding \$5. Individual citizens are permitted to coin money, but this coin must not be in "resemblance or verisimilitude" to those made by the government.

COIRE. See **CHUR**, *ante*

COIT, THOMAS WINTHROP, D.D., LL.D., b. Conn., 1803; a graduate of Yale; rector of St. Peter's (Episcopal) church, Salem, Mass., in 1827, and two years later of Christ church, Cambridge. In 1834, he was chosen president of Transylvania university; in 1854, he was elected professor of ecclesiastical history in Berkeley divinity school, Middletown, Conn. He has published *A Theological Common place Book*; *The Bible and Apocrypha in Paragrafts and Parallelisms*; *Remarks on Mr. Norton's Statement of Reasons*; *Puritanism, a Churchman's Defense against its Aspersions*; *Lectures on the Early History of Christianity in England*, etc.

COKE, THOMAS, D.D., LL.D., 1747-1814; b. Wales; first bishop of the Methodist Episcopal church. He was educated at Oxford, and entered the ministry of the established church about 1775; but objections were made to his sermons as too evangelical, and he was silenced. After an interview with Wesley he joined the new denomination and was sent to London, where he became popular. In 1782, he was appointed president of the Irish conference, and in 1784, he was made bishop of America, reaching New York in the same year. Francis Asbury acknowledged his authority, and was by him ordained a bishop. They traveled together among the various conferences until the middle of 1785, when Coke returned to England, and visited Scotland, Wales, and Ireland. He made another visit to America, and afterwards devoted himself to missionary work, his first efforts being among the negroes in the West Indies. Again he traveled in a portion of the United States, and returned to England in 1787. The next year he again visited the West Indies and the United States, and again in 1790. After Wesley's death he was chosen secretary of the general conference. The remainder of his days were passed in active missionary work in Europe and America, and in 1813 he sailed for Ceylon, dying on the voyage. He wrote a life of Wesley, a commentary on the Scriptures, *History of the West Indies*; *History of the Bible*; *Defense of the Doctrine of Justification by Faith and the Witness of the Holy Spirit*, and many essays.

COLBERT, a co. in n.w. Alabama on the Genessee river, intersected by the Memphis and Charleston railroad; pop. '70, 12,537—4,639 colored. The productions are wheat, corn, oats, cotton, etc. Co. seat, Tuscumbia.

COLBERT, JEAN BAPTISTE, 1651-90; son of the French minister of finance. He succeeded his father as the head of the navy, and by his energy raised that branch of public defense to its highest efficiency. In 1684, he personally led a naval expedition against Genoa.

COLBURN, WARREN, 1793-1833; b. Mass.; a graduate of Harvard in 1816, and teacher of a select school in Boston. His taste turned to mathematics, and in 1821 he published *First Lessons in Arithmetic*, the sale of which far exceeded that of any previous mathematical work. It was translated into nearly all the languages of Europe and into some of those of India. From teaching he went into manufacturing, and was superintendent of large operations in Waltham and Lowell; but much of his time was

devoted to lecturing on scientific subjects. In 1827, he became a member of the American academy of sciences, and was for several years one of the Harvard examining committee.

COLBURN, ZERAH, 1804-40; b. Vt.; wonderful for natural gifts in mathematics. At six years of age, he was brought before the public in exhibitions, and his performances excited great interest. There seemed to be no limit to his analytical capacity. He answered almost on the instant such questions as How many seconds in 11 years? What is the square of 999,999? and many more difficult. He was taken to England for exhibition; but the father returned in poverty, leaving Zerah at Westminster school, where he remained until 1819. The father then desired him to become an actor, and he took lessons from Charles Kemble. Failing in this, he taught school. On his father's death he returned and taught in various places. In 1825, he joined the Methodist church, and became an itinerant preacher, and in 1835, was appointed professor of languages in Norwich university. It is stated in his autobiography that the remarkable talent for mathematical work left him about the time he came of age.

COLBY, THOMAS, 1784-1852; an English engineer engaged in the trigonometrical survey of that country. He was a leading worker in other surveys, especially in Ireland, and became superintendent of that branch of public service. The invention of the "compensation bar" (a rod of brass and iron, the ends of which are always at the same distance without regard to temperature) is attributed to him; and he made great improvements in maps and charts.

COLBY UNIVERSITY, incorporated by the legislature of Massachusetts in 1813 as "The Maine Literary and Theological Institution." It was established in Bangor, but in 1818 it was transferred to Waterville, on the Kennebec river, 18 m. above Augusta, and two years later received from the legislature of the new state of Maine the name of "Waterville college." In 1867, when the college received a large endowment from Gardner Colby of Massachusetts, the name was changed to the one now used. Besides an endowment of \$230,000, there is a recent bequest of \$120,000 from Mr. Colby. Its annual income is about \$20,000. The college is under the control of the Baptists. At the last report, Henry E. Robins, D.D., was the president; there were 8 instructors, and 157 pupils. The alumni number over 600. Women are admitted to the classes. The course is the usual college course of four years. The library has 14,500 volumes. The Waterville classical institute, controlled by the managers of the university, has the place of a preparatory department.

COLCHAGUA, a province in Chili between the ocean and the Andes, 3,516 sq. m.; pop. '75, 146,889. The climate is good and the soil fertile. There are gold and copper in the mountains. Chief town, San Fernando.

COLCHESTER, a co. in Nova Scotia around the upper part of Mines channel and Cobequid bay; 1300 sq. m.; pop. '71, 23,331. There are mines of gypsum and coal, and limestone is plentiful. The chief occupations are agriculture, lumbering, and ship-building. Chief town, Truro.

COLD. See **CATARH**, *ante*.

COL DE LA SEIGNE, a pass in the Alps leading from the Val d'Aosta in Piedmont into Savoy, 7 m. w.s.w. of Mont Blanc. The crown of the pass is 8,472 ft. above tide.

COLDEN, CADWALLADER, 1688-1776; a native of Scotland who came to America in 1708 and practiced with great success as a physician in Philadelphia. In 1718, he settled in New York city. He was the first surveyor-general of the colony, a member of the provincial council, and in 1761 was appointed lieutenant-governor, holding the office until his death, which took place on Long Island five weeks after the British took possession of New York city. As the governors were often changed, C. was the real executive of the colony for 15 years. He published a number of works, of which the most important is his *History of the Five Indian Nations of Canada*, a work of great value. One of his favorite studies was botany, in the pursuit of which he sent many hundred plants to Linnæus, who published descriptions of them.

COLDEN, CADWALLADER DAVID, 1769-1824; grandson of Cadwallader. He was bred to the law, and became one of the most eminent of the New York bar. In the war of 1812, he was a colonel of volunteers. In 1818, he was chosen to the state assembly, and in the same year was appointed mayor of New York. He was chosen to congress in 1822, and to the state senate in 1824. C. was one of Clinton's best supporters in the work of internal improvements; and he was conspicuous in the cause of public education, the reformation of juvenile offenders, and other moral and social reforms. He wrote the life of Robert Fulton, and a memoir on the opening of the New York canals.

COLD HARBOR, BATTLES OF. See **CHICKAHOMINY**.

COLD SPRING, a village in Putnam co., N. Y., on the Hudson river and the Hudson river railroad, 53 m. n. of New York. The place is noted for the manufacture of cannon, brass castings, and machinery.

COLDWATER, a city in Branch co., Mich., on the Coldwater river and Lake Shore and Michigan Southern railroad, 115 m. w.s.w. of Detroit; pop. '70, 4,381. It is the center of an important local trade.

COLE, a co. in central Missouri, on the Missouri river, bounded s.e. by the Osage, intersected by the Pacific railroad of Missouri; 410 sq.m.; pop. '70, 10,292—1,251 colored. The soil is generally fertile, producing wheat, corn, oats, etc. Co. seat, Jefferson City, the state capital.

COLE, THOMAS, 1831-48; b. England; came to the United States in 1819. Having a taste for painting, he persevered, without teachers, money, or encouragement, until 1825 before obtaining general recognition. In that year he set up a studio in New York in the garret of his father's house. He began to paint scenes from nature, going to the Catskills for the purpose, and very soon secured the public appreciation for which he had labored. Thenceforth his career was prosperous. He visited the White mountains and Niagara, and in 1829 went to Europe, furnishing pictures for various exhibitions. After visiting Florence, Rome, and other art centers, he returned to New York in 1832. Receiving an order to furnish a private gallery with his pictures only, he produced his "Course of Empire," five paintings which he intended to be an illustration of the history of the human race. These works are now in the gallery of the New York historical society. In later years Cole produced "Departure" and "Return," the "Dream of Arcadia," and the "Voyage of Life." The latter, an allegory in four pictures, was one of his most popular works, and elicited praise from Thorwaldsen, with whom Cole became intimate on a second voyage to Rome in 1841. He returned in the same year. Among his many works, besides these mentioned, are: a picture of Mt. Etna, views in the White mountains, and on Lake Winnipiscogee, the "Angel Appearing to the Shepherds," "L'Allegro," "Il Penseroso," "Home in the Woods," "Hunter's Return," "Mountain Ford," "The Cross and the World," etc.

COLEMAN, a co. in w. Texas, on the affluents of the Colorado; 1000 sq.m.; pop. '70, 347. The region is adapted to cattle-raising. Co. seat, Camp Colorado.

COLEMAN, LYMAN, D.D., b. Conn., 1796. He traveled and studied in Europe, and has been connected with several literary institutions in the United States. In 1873, he was professor in Lafayette college. He has published *Antiquities of the Christian Church; Ancient Christianity; Historical Text-book and Atlas of Biblical Geography; Prelacy and Ritualism*, and other works.

COLENSO, JOHN WILLIAM, D.D., b. England, 1814; educated at Cambridge, and was fellow and assistant tutor in St. John's college. In 1853, he was appointed first bishop of Natal, South Africa. He published a number of books on mathematics, *Village Sermons, etc.*; but the first of his works that attracted especial attention was *A Translation of the Epistle to the Romans, Commented on from a Missionary Point of View*, issued in 1861. This was followed in 1862 by *The Pentateuch and Book of Joshua Critically Examined*, in which the authorship of Moses and the accuracy of many statements in the books were questioned. An attempt was made to depose the writer by his superior, the bishop of Cape Town, but the deposition was declared void by the privy council. The local bishops then stopped his income, but the court of chancery ordered it to be paid, with arrears and interest. In recent years Colenso has published *Natal Sermons*, a Zulu grammar, dictionary, and New Testament, and other educational books in that language. His later works are *The New Bible Commentary by the Bishops and Other Clergy of the Anglican Church, Critically Examined*, and *Lectures on the Pentateuch and the Moabite Stone*.

COLERIDGE, HENRY NELSON, 1800-43; nephew of the English poet, and graduate of Cambridge, devoted to letters, an associate of Macaulay, Praed, and others in writing for *Knight's Quarterly Magazine*, where he appeared over the signature of Joseph Haller. In 1825, he published *Six Months in the West Indies*. The next year he was called to the bar, and about that time married his cousin, the poet's daughter. His most important literary work was done as his uncle's executor in publishing the *Table Talk; Literary Remains*; and *Confessions of an Inquiring Spirit*.

COLERIDGE, SIR JOHN TAYLOR, D.C.L., b. 1790; a nephew of the poet, and member of the English bar. In 1835, he was made a judge of the king's bench, and a privy councillor in 1858. On the retirement of Gifford in 1824, he became for a short period editor of the *Quarterly Review*. He published an annotated edition of Blackstone's *Commentaries*.

COLERIDGE, SARA, 1802-52; only daughter of the poet, and wife of her cousin, Henry Nelson Coleridge, whom she married in 1829. One of her first publications *Pretty Lessons for Little Children*, designed for her own children, became a popular household book. She assisted her husband in editing her father's works, and when the husband died, assumed the whole responsibility herself. She edited *Notes on Shakespeare; Aids to Reflection*; and *Essays on His Own Times*. In 1837, she published *Phantasmion, a Fairy Tale*, her longest original work. In her later years she was a confirmed invalid.

COLES, a co. in s.e. Illinois, watered by Embarras river, and intersected by the Illinois and St. Louis, and Illinois Central railroads; 550 sq.m.; pop. '70, 25,235. The surface is prairie and forest with fertile soil. Chief productions, wheat, oats, corn, butter, wool, and sorghum molasses. Co. seat, Charleston.

COLET, JOHN, 1466-1519; an English theologian who studied in Paris and Italy, and became acquainted with Budæus and Erasmus. Returning to England he filled several offices in the church, ending with dean of St. Paul's. He founded St. Paul's school in London, of which William Lilly was the first master. His religious opinions were so much more liberal than was common at the time that he was subjected to considerable persecution. As dean of St. Paul's, he introduced the practice of preaching from and expounding the Bible; and though he remained in communion with the church of Rome, he disapproved of auricular confession and the celibacy of the clergy. His influence is traceable as paving the way for the reformation.

COLET, LOUISE REVOIL, 1808-76; a French poetess and novelist, wife of a musical professor in the Paris conservatory. Her first work, *Fleurs du Midi*, gained her the friendship of Cousin, but it was so severely criticised by Alphonso Karr that the authoress undertook to stab him with a knife. In 1839, she published *L'enserosa*, a second volume of verse; and this was followed by *Le Musée de Versailles*, a poem for which she was crowned by the institute; *La Jeunesse de Goethe*, a comedy; and *Les Cours Brisés*, a novel. In 1840, she published *Les Funérailles de Napoléon*, a poem, and *La Jeunesse de Mirabeau*, a novel. In 1849, she was sued by the heirs of Madame Recamier for publishing that famous woman's correspondence with Benjamin Constant. She was crowned five or six times by the institute, more through the influence of Cousin than from the merit of her works. She wrote many stories, plays, didactic poems, and travels, but they show no remarkable talent.

COLFAX, a co. in n.e. Mississippi, on the Tombigbee river, intersected by the Mobile and Ohio railroad; formed after the census of 1870. Co. seat, West Point.

COLFAX, a co. in e. Nebraska, bounded s. by Platte river; intersected by the Union Pacific railroad; 500 sq.m; pop. '70, 1424. Agriculture is the main business. Co. seat, Schuyler.

COLFAX, a co. in n.e. New Mexico, on the Colorado and the Rio Grande; pop. '70, 1992. Co. seat, Elizabethtown.

COLFAX, SCHUYLER, b. New York, 1823. He went to Indiana in 1836, where he studied law, and in 1845 became editor of the *Register*, a whig newspaper at South Bend. He was elected to congress in 1854, and was six times re-elected, being speaker of the house in 1863. In 1868, he was nominated for vice-president and elected. Since the expiration of his term, Mar. 4, 1873, he has not been prominently in public life.

COLLAMER, JACOB, LL.D., 1792-1865; b. N. Y., but removed when young to Vermont, graduating at the university of that state in 1810. He was admitted to the bar in 1812, and soon became one of the leading lawyers of the state. He was associate justice of the supreme court from 1833 to 1841. In 1842, he was chosen a member of congress, and twice re-elected. He was postmaster general in Taylor's cabinet for a year; and in 1850, was elected judge of the supreme court of the state. In 1856, he was elected to the U. S. senate, where he served until his death.

COLLEGE HILL, a village in Hamilton co., Ohio, 6 m. n. of Cincinnati, the seat of Farmers' college, and of the "Ohio Female College."

COLLEGE POINT, a village in Queen's co., N.Y., on Long Island sound, and a branch of the Long Island railroad, 11 m. e. of New York; pop. about 4,500. There are several manufactories, one very large establishment making india rubber goods.

COLLEGES, AMERICAN, have been organized mostly according to one general plan. A corporation, acting under a charter granted by the legislature, has control of the property, appoints the instructors, makes laws for the government of the institution, and confers degrees. In some colleges the trustees fill the vacancies which occur in their body; in others, the state appoints some or all of the board; and in an increasing number, the alumni elect a certain part. In this country, the distinction between a college and a university has never been sharply drawn. Some of the youngest and smallest institutions call themselves universities, and some of the oldest have out-grown the condition of the college, assuming the name of the university.

As a large number of American colleges were established with special reference to the training of young men for the Christian ministry, the course of study was naturally arranged in accordance with that design. A century ago the studies chiefly pursued were Latin, Greek, mathematics in limited measure, and, in larger proportion, logic, metaphysics, rhetoric, and oratory. Theology received special attention during the latter part of the course. Towards the close of the last century, natural philosophy and astronomy began to be more thoroughly studied. Modern languages and physical and political science had hardly an assured place in the course until after the present century began. Towards the middle of the century, there was manifest an increasing dissatisfaction with the restricted course. Formerly there had been three distinctively marked professions— theology, medicine, and law; but as new employments were developed, having the dignity and responsibility of professions, modifications in preparatory studies became necessary. To secure them, various methods were proposed. Some persons demanded that the course of study in existing colleges should be changed by dropping certain studies, so making room for those with new and higher claims; others desired that new studies should be added to

the old, or that parallel courses should be established with liberty of choice between them, a third class believed that new institutions were required for the new studies. Much has been accomplished in all these directions except the first. No previously established college has abandoned the old course, and it is not probable that any one will. But very many have added to the old course elective studies which are submitted to the student's choice. Parallel courses, also, have been established. The old method aims first at securing mental development, culture, and discipline, which may afterwards be applied to the chosen course of life. The new makes immediate preparation for that course its first aim, and is satisfied to have mental discipline and culture as the incidental yet the assured result of the studies pursued. In most of the new institutions of the west, there are several courses of study, among which students are allowed their choice. The older colleges of the east, even the oldest, are impelled to follow in the same path. They have all, for some time past, given a limited range of elective studies during the latter half of the course. In 1859, Harvard extended the liberty of choice through three out of the four years. The movement has reached beyond the Atlantic, even the university of Oxford, where the supremacy which Latin and Greek had maintained for centuries has been broken. In 1872, the statutes were amended so as to include mathematics, natural science, natural history, jurisprudence, and theology, among the subjects in which candidates for degrees may be examined, and to allow a wide range both in subjects and authors, on which the examination may be passed. The latitude of choice is even greater than in most American colleges.

Besides elective courses in a college, separate colleges have been established exclusively for scientific and practical studies. Some of these are departments of existing colleges, e.g., the scientific schools in Yale, Columbia, Princeton, and Lafayette colleges; and some are independent, e.g., the institute of technology, in Boston, and the Stevens institute at Hoboken, and the agricultural and industrial colleges endowed under the congressional grants of 1833. These changes are partly the result and partly the cause of the great development of physical science which marks the present generation. The science of matter, as distinct from the science of man and of mind, now importunately demands a high place in public regard. Yet the old science cannot be driven out. It has a sphere into which nothing can intrude. The greater the increase of material knowledge, the more will mental and spiritual attainments ultimately be required. The wisest friends of metaphysical study, therefore, view with no disfavor the splendid augmentation of facilities for physical investigation.

Examinations at college, when designed as tests of comparative scholarship, are now, from the beginning of the course to the end, conducted in writing and by means of questions furnished alike to the whole class and at the same time. This method commends itself by its fairness to every mind; yet "examination papers" are scarcely more than one generation old.

Separate colleges for the education of women have been established with great success. But because of the inadequacy of these, at least in point of numbers, many persons are debating the question—Shall not young women be admitted into the same institutions and be taught in the same classes with young men? On the affirmative side it is maintained that as the sexes are associated together in the employments of childhood and of mature life with safety and advantage, so may they be in acquiring their education. Those who take the negative side reply that this is the period during which their association together is attended with the greatest dangers, and is most in need of restrictions, which cannot, in general, be fully maintained during the exercises of college life.

COLLEGIANTS, a sect in Holland who called their assemblies colleges. They rejected creeds, had no regular ministry, nor any form of church government. They adopted baptism by immersion, but their communion was open to all. They were not unlike the Plymouth Brethren of the present day.

COLLEGIATE INSTRUCTION FOR WOMEN, PRIVATE (familiarly known as the "Harvard Annex"). For several years prior to 1879, the question of the higher education of women had fixed the attention of a small circle of friends of Harvard college, including a portion of its alumni and instructors. The opening of many other colleges to the entrance of women, and the founding of several more for their exclusive advantage, naturally raised the question whether Harvard should not take some part in a movement which was exciting so profound an interest both in this country and in Europe. The opposition to admitting women to the college was based on cherished traditions, and strengthened by fears that could not be lightly disregarded. Yet it was felt that in some way the superior advantages of Harvard should be made available to those women that sought them. The parents of one family, who had the subject much at heart, after consultation and inquiry, happily succeeded in devising a plan which quickly commended itself to leading members of the faculty, and which has been executed with satisfactory results. The plan, in brief, was, to provide for women a course of private study, under the direction, voluntarily given, of the most distinguished members of the faculty; and to give to those who successfully pursued this course certificates of their proficiency. Some of the most eminent and conservative friends of the college gave this plan their hearty concurrence, and the professors whose co-operation was most desired offered their assistance. It was seen that an experiment of the

highest importance could thus be made without involving the college itself in responsibility or alarming its most conservative supporters. Every step in execution of the plan was carefully and deliberately taken. A board of managers, composed of ladies of the highest social standing, was formed. The president of the college was duly informed of the whole project, and his advice carefully weighed. A committee of five of the professors was appointed as an advisory board, with instructions to establish a working-scheme, lay out the courses of study, and fix the conditions for the admission of students. When due preparations had been made, the lady managers issued a circular explaining the plan, and stating that further information as to the qualifications required of pupils, with the names of the instructors in any branch of study, might be had upon application to their secretary or any one of their number. The requisitions for admission were established by taking as standard the Harvard examinations for the admission of freshmen. April 9, 1878, a second circular was sent out, in which the conditions of admission were definitely stated for the academic years 1879-80 and 1880-81, with the announcement that the courses, if successful, would be continued. "Any one," said the circular, "will be admitted to the instruction here afforded who passes satisfactorily in any eight of the following subjects: 1. English; 2. Physical geography; 3. Botany or physics; 4. Mathematics, including arithmetic, algebra through equations of the first degree, proportions, fractions, and common divisor; 5. Mathematics, including algebra through quadratics, and plane geometry; 6. History; 7. French; 8. German; 9. Latin; 10. Greek. Examinations to be held in Cambridge, New York, Philadelphia, and Cincinnati; beginning May 28, 1879. Regular fee for examination, \$15. Fee for a year's instruction, \$200." Arrangements were proposed also for special students in selected branches, and for advanced studies. Applications came in rapidly, and 27 women, most of whom desired to take advanced studies, were admitted. Twenty-four courses of instruction were given during the first year by eight professors, seven assistant professors, and eight instructors. The college recitation rooms were not used by the lady students. Two ladies, living near the college, generously opened their houses to the "annex," one giving up her library for recitations, the other her parlor as a consulting-room. Thus, without any departure from the privacy of home life, the ladies pursued their studies, with no excitement in or around the college. It was feared that the presence of the lady readers in the library, side by side with the young men, might lead to unpleasant consequences; but the young lady who most frequented the place testified that the courtesy of the college students was all that could be desired. It may possibly be discovered in the future that the same courtesy is to be depended upon if the lady students should be admitted to the recitation room as well as the library. The "annex" has more than fulfilled the best anticipations of those who created it. The professors and instructors who have had charge of the lady students are cheered, perhaps even surprised, by the result of their labors. "There is, on the part of our academic faculty," says the professor of ethics, the venerable Dr. Peabody, "entire satisfaction with the working of our system for the education of women." The simple organization, which is all that is required, has Arthur Gilman as its secretary.

COLLES, CHRISTOPHER, 1738-1821; a native of Ireland, who came to America before the revolution and delivered lectures in New York on land-locked navigation. One of the first steam-engines made in the country was designed by him; and he was among the earliest to propose water supply by reservoirs for the city of New York. He anticipated the great Erie canal as early as 1784, when he recommended to the legislature the connecting of lake Ontario with the Hudson river by canals and such natural channels as could be used, and with this purpose in view he surveyed the Mohawk river. He first explored the principal roads of the state of New York, and published descriptions of them.

COLLETON, a co. in s.e. South Carolina, on the Atlantic ocean, intersected by the South Carolina and the Savannah and Charleston railroads; 1672 sq.m.: pop. '70, 25,410—16,492 colored. The soil is level, and mostly alluvial, producing cotton, corn, sugar, and great quantities of rice. Co. seat, Waterborough.

COLLETON, JAMES, one of the governors of the province of South Carolina, appointed in 1686 in the interest of the proprietors, one of whom was his brother. The colonial parliament and the people, however, were opposed to him, and when William and Mary were proclaimed he was deposed and banished.

COLLETTA, PIETRO, 1775-1831; a native of Naples who took an active part during the French invasion, and in 1812 became a gen. The restoration of the Bourbons made him a prisoner; but when the revolution began he was sent to Sicily as viceroy, and soon afterwards made minister of war. He endured other banishments, but was permitted to die in Florence.

COLLIER, ARTHUR, 1680-1732; rector of Langford in England, a charge which had come down through the family from his great-grandfather. His most important work was *Clavis Universalis, or a New Inquiry of the Truth, being a Demonstration of the Non-existence or Impossibility of an Eternal World*. But in the substance and purposes of this work he had been anticipated by others, notably by bishop Berkeley, and though it was translated in Germany, it attracted very little notice elsewhere. Its thought is crude,

and it lacks the scientific development which has commended bishop Berkeley's work even to thinkers of our own day.

COLLIMATOR, AND COLLIMATION, in astronomy, determining the zenith point on a vertical circle without using the plumb line, the spirit level, or any reflecting surface, and that too at any moment of time. There are two kinds of collimators, the horizontal, and the vertical. The horizontal collimator is a telescope of small dimensions, firmly attached to a cast-iron plate floating on mercury, and having a cross wire in its focus. A telescope thus arranged, when placed on the surface of a basin of mercury, will always assume a horizontal position. By illuminating the cross wires the rays from them will issue parallel, and may always therefore be brought to a focus by the object-glass of any other telescope; in which they will form the image of any celestial object in their direction. The vertical collimator consists of a vessel of mercury towards which the object glass of a telescope, attached to a circle or transit instrument, may be directed, so that the cross wires in its focus may be reflected in the mercury. The wires of the instrument are illuminated by a lamp placed laterally so that the rays from the lamp may be conducted to the wires without entering the eye of the observer; the telescope is then directed to the surface of the mercury. The rays issue from the wires in parallel lines, and are reflected back to the object-glass, which is enabled to collect them again to its focus. By this means a reflected image of the cross wires is formed which indicates the vertical position of the tube with great accuracy.

COLLIN, a co. of n.e. Texas, watered by one of the branches of Trinity river; 870 sq.m.; pop. '70, 14,013—1653 colored. Agriculture and stock-raising are the chief occupations. Co. seat, McKinney.

COLLINGWOOD, a t. in Simcoe co., province of Ontario, Canada, on the Georgian bay; pop. '70, 2,829. It is important as the terminus of the Northern railway on the line of travel to and from lake Superior.

COLLINGWOOD, in Australia, a suburb of the city of Melbourne, on the n.e. toward Yarra Yarra, having a pop. of nearly 20,000. There are many public buildings and manufactories.

COLLINS, MORTIMER, 1827-76; an English poet and novelist, early engaged in journalism in London. In 1855, he published a volume of lyrics, and ten years later his first novel, *Who is the Heir?* and another volume of verse. *The Inn of Strange Meetings*, was issued in 1871, and the next year he produced his longest poem, *The British Birds, a Communication from the Ghost of Aristophanes*. He was a prolific contributor to journals and magazines, and wrote several other novels, of which *Sweet Anne Page* was very popular.

COLLINSON, PETER, 1693-1768; an English botanist, a member of the society of Friends. He corresponded with Benjamin Franklin, Cadwallader Colden, and other men of science of the period, and is said to have sent to Franklin the first electrical machine known in America. One of his pursuits was the naturalization of plants, flowers, and trees. He sent English plants to America and brought American plants to his own country, successfully introducing many new species. He is also credited with first suggesting grape cultivation in Virginia.

COLLISION, in mechanics, the meeting of two bodies, one or both of which are at the time in motion. The motion or velocity of the bodies after the contact depends upon their firmness, or solidity. If perfectly incompressible, they will move together as one body; if elastic, they will be more or less compressed, but will resume their shape, and the motion will depend upon the amount of force created by the collision.

COLLISION OF VESSELS (*ante*). If a collision happens without fault, and no blame can be charged to those in charge of either vessel, each party must bear its own loss. In case both parties are at fault, neither can have relief at common law; but maritime courts aggregate the damage to both vessels and their cargoes, and divide the amount equally between the two. In case of inscrutable fault, that is, by a fault of those in charge of one or both vessels, and yet under such circumstances that it is impossible to learn who is at fault, the rule of equal division is also adopted. Where the fault is on the part of one vessel and no fault on the other, the owners of the vessel at fault must bear their own loss, and are also liable for the damage to the other vessel. In some cases the personal liability of owners is limited to the value of the vessel and freight. Strict laws, rules, signals, etc., are adopted by all nations to prevent collision. (See **NAVIGATION, LAWS OF**, *ante*.) But, no matter how exacting be the rules, cases will occur when their following would result in disaster. No vessel should unnecessarily incur the probability of collision by strict adherence to the rules. If it is clearly in the power of one vessel to avoid collision by departing from the rules, she will be held bound to do so; but a vessel is not required to depart from the rule when she cannot do so without danger. A proper lookout must be kept; the absence of such a lookout is in itself evidence of negligence. In some cases certain lights must be kept. Losses of the injured vessel by collision are within the ordinary policy of insurance; but when the collision is the fault of the insured vessel, or of both vessels, the insurer is not ordinarily liable for injury done to the other vessel which may be decreed against the vessel insured; but recent policies provide that the insurer shall be liable in such case.

Undue speed on the part of a steamer in a dark night, or in thick weather, or in crowded thoroughfares of commerce, will render the steamer liable for damages occasioned by collision; and it is no excuse to plead that the steamer was carrying the mails. Where a pilot is lawfully in charge of a vessel, he only is responsible for damages; but it must be shown that the collision was due to his fault.

COLLOREDO, the name of an Austrian family, a branch of the house of Waldsee, dating from the 11th century. They were distinguished in the thirty years' war, in the siege of Candia, and in diplomacy in all parts of Europe.

COLLYER, ROBERT, b. England, 1823. He emigrated to the United States in 1841, and became a Methodist minister. In 1850, he adopted Unitarian views, and soon became one of the most famous preachers of that denomination. From 1859 to 1879 he was pastor of the Church of the Unity, Chicago. He is at present in charge of the Church of the Messiah, New York city. He is also widely known as a lecturer.

COLMAN, BENJAMIN, D.D., 1673-1747; b. Boston; graduate of Harvard, 1692. He was the first pastor of the Brattle street church in Boston, holding the place until his death, a period of nearly 50 years. He was chosen president of Harvard college, but declined the office. His sermons and some poems were published.

COLMAN, HENRY, 1785-1849; b. Boston; graduate of Dartmouth; minister of a Congregational church at Hingham from 1807 to 1820; and from 1825 to 1831, Unitarian pastor in Salem. He was agricultural commissioner for Massachusetts, and published (after a trip to Europe) "*Agricultural and Rural Economy in France, Belgium, Holland, and Switzerland; European Agricultural and Rural Economy; European Life and Manners, in Letters to Friends*;" and also reports on the silk culture, and on the agriculture of Massachusetts.

COLMAN, SAMUEL, b. Maine, 1832; an artist noted for American and foreign landscapes.

COLOCOLO, a large cat, native to the n. part of South America. It is wild and very ferocious, making great havoc among monkeys and other small animals.

COLOGNE WATER. See EAU DE COLOGNE, *ante*.

COLOMBO ROOT, the root of an African vine, a mild tonic, containing columbin, berberine, and columbic acid, with starch and coloring matter.

COLON. See ASPINWALL, *ante*.

COLONEL (*ante*). There is no material difference in the position of col. in the American as compared with the British army. The rank is between lieut.col. and brig.gen., and the extent of command is usually a single regiment.

COLONIZATION SOCIETY, THE AMERICAN, an association organized in 1816 for the purpose of transporting free and uncommitted negroes from the United States to Africa. In 1819, congress appropriated \$100,000 in aid of the work, and the next year the society sent out the first colonists. Henry Clay was for a long time president of the society. The emancipation brought about by the war of the rebellion has rendered the legitimate work of the society of little importance, although its organization is still kept up.

COLONNA, GIOVANNI PAOLO, lived in the latter part of the 17th century. He was chapel-master of St. Petronia at Bologna, and president of the philharmonic academy there. The school established by him produced many good musicians, one of whom was Clari. His works are mostly for church services, and many of them are among the most remarkable compositions of the 17th century.

COLORADO (*ante*), named from the Colorado river, meaning "red water." It is the 38th and youngest of the states of the American union, admitted Aug. 1, 1876. It is bounded by arbitrary lines of lat. and long., 37° to 40° n. and 102° to 109° w., being about 280 to 380 m., and estimated to contain 106,400 sq. miles. It is n. of New Mexico, and e. of Utah, s. of Wyoming and Nebraska, and w. of Nebraska and Kansas, and lies on both sides of the Rocky mountains, on the head waters of the Platte and the Arkansas running e., of the Rio Grande del Norte going s., and the Colorado running west. Thus C. forms a conspicuous portion of the great mountain water-shed of the continent. The source of the Platte at Montgomery is 11,176 ft. above tide, and its fall in the short distance to Denver is 6,000 feet. The Arkansas rises 10,176 ft. above the sea, and rapidly falls to 7,877, in one place passing through a cañon with walls of 1000 to 1500 feet. The Rio Grande del Norte rises in the Sawatch (Sp. *Sagrado*) range (a continuation of the Sierra Madre of Mexico), flows through San Luis Park into New Mexico, and forms the boundary between Mexico and the United States below El Paso, about 32°. The largest of the head streams of the Colorado are the Elar, White, Bunkara, Gunnison, San Miguel, and Dolores. None of these streams are navigable. The only lake in C. of any consequence is that of San Luis, in the s. part of the state; about 60 m. long, with a quarter of that width. This lake receives nearly 20 streams of various sizes, but has no visible outlet. It lies in a highly picturesque region in the center of San Luis Park.

C. is traversed from n. to s. by the Rocky mountain chain, known by various names.

according to location or direction. The Sawatch range is a mass of solid granite averaging 13,000 ft. high, and presents a bold and conspicuous outline. The width of this range is from 15 to 20 mi. s. Among the peaks, somewhat closely grouped, are Bowles, 14,103 ft.; Howard, 14,203; La Plata, 14,126; Elbert, 14,150, and Grizzly peak, 13,706; Massive mountain, 14,192. The range is then comparatively low for 18 mi. to the n., but again rises in the terminal peak of the Holy Cross (13,478 ft.), so named because the snow in the ravines near the summit presents that figure to the eye. The Elk mountains strike off from the Sawatch range in a s.w. direction for 30 mi., and are interesting to geologists for the remarkable displacement of strata of which they are composed and the apparent confusion to which this condition has given rise. The more noteworthy peaks are Italian mountain (13,431 ft.), so named because it shows the colors of Italy—red, white, and green; White rock, 13,847; Tecahi, 13,274; Crested Butte, 12,614; Gothic, 12,491; Snow Mass, 13,931; Maroon, 14,030; Castle peak, 14,103; Capitol, 13,992; White House, 14,000; and Sopris, 12,972. Of less importance are the Uncompahgre in the s.w., the Raton in the s., and the Wet mountain in the e. The eastern mountains which a cut on the region of the plains are called the Front range. These mountains rising along the border line present in their rough and precipitous faces the strong, bold outlines produced by the metamorphic rocks, the granite, gneiss, and the shists; while the sedimentary rocks at their bases—the limestones, shales, slates, clays and chiefly sandstones—present a different appearance. These sedimentary rocks at their point of contact with the granites are not horizontal, but have been turned up on end by the force exerted by the granite mass against which they were deposited, when it lifted them to their present positions. Their slope to the e. from this point is nowhere more than 60°. They form the basis of the great plain, and were once the bed of the sea, which, on receding, left those thousands of feet of sediment to be carved out and carried off by the ice and water, which have left such wonderful traces of their power. The first feature of the lowlands is the low series of hills of a very even line of elevation, forming a sort of horizon or belt near the foot of the mountains, cut at intervals by the streams which descend from the hills. The ends of these hills that overlook the streams, being afterwards rounded, give each section a long, gently curved line at its upper surface, which has earned for them the name of "hogbacks." They seem to be a natural boundary line between the two geological systems here brought together. It is now believed that the sedimentary rocks, the ends of which are now exposed to view along the eastern side of this valley, must have extended very much farther into the mountains, and that after the elevation of their mass they were partly removed by erosion. The thickness of these layers is given by Dr. Hayden's survey at 7,000 feet.

About half-way between Denver and the "garden of the gods" is the divide which separates the waters of the Platte from those of the Arkansas. This elevation of a little over 10,000 ft. above Denver controls the flow of the tributaries of those streams until they reach the open plains to the n. and s. of this point, when they take the direction of the long gentle slope to the east. To the s. of this divide the peculiar, almost monotonous units of rock increase in number until the "garden of the gods" is reached, which owes its name to the grand display of these objects at that place. These monuments seem to have been formed in several ways, principally, however, by erosion; these isolated parts have been left because they were either of harder material than the surrounding mass, or more able to resist meteoric shocks. They seem to be an aggregation of quartz and pebbles loosely held together in a nearly circular condition, water having run from the sides one toward the top. This shaft is surmounted by a cap of rust-colored sandstone, which owes its greater size to the oxide of iron that forms a cement, binding the grains together. The smaller monuments here described vary in height from 10 to 20 feet. There are also the castellated forms of the larger table buttes or "mesas." These massive objects are from 100 to 250 ft. in height, and are sometimes capped with a layer of purple porphyritic basalt. They rise from the beautiful green meadows, and their almost perpendicular sides give them an appearance which is particularly impressive at sunset.

The famous South Park covers an area of 1200 sq. mi., with a general elevation of 8,000 ft., rising at times to 10,000 feet. It is surrounded by mountains, the bases of which bear marks of its having been the bed of a lake. The valley of the Arkansas, a hundred miles long through the mountains to Poncho pass, with a width of 8 to 10 mi., a borderland of red dirt hills for the study of glacial action in the west. At first the valley must have had a large glacier running from n. to s. through its length, as there are still traces of streaming ice in the markings on the sides of the mountains and in the drift matter on its slopes. Then part of this valley formed the bed of a large lake, as is shown by the deposits in the bottoms where they are exposed. This lake occupied the lower half of the valley, and when it was drained off through the opening now traversed by the Arkansas river the heavy and coarse material at the upper end and the finer drift matter at the lower end were exposed. The valley has many rounded oblong hills, which are covered by debris and range in height from 500 to 700 feet. After this first large glacier came others, which might be called secondary, and occupied the beds of the present tributary streams of the Arkansas. Each one of these is marked by large moraines, and where exposed the glaciation is magnificent. The masses of rock which have been

transported by these agencies are incredibly large, often reaching 100 ft. in diameter. This whole valley must have been occupied by a glacier of from 1000 to 1500 ft. in depth. The terminal moraines of this glacier are remarkable for their size. Everywhere the traveler is hindered in his journey by mounds, ridges, basins, and bowlders, the latter often from 20 to 50 ft. in diameter. Worn rocks are also exposed, showing the effect of ice on their surfaces. San Luis is the largest of the parks, and is in the central s. part of the state between the Wasatch and the Eastern ranges. This region is the lowest land in the state, and is exceedingly fertile. It is watered by the tributaries of the Rio Grande, and has a delightful climate. Crossing the Rocky mountains to the n. we reach South Park (above described). Further on is Middle Park, somewhat larger and higher, and still further is North Park, the last of the series—the whole four parks extending in a line n. and s. through the middle of the state. All these parks are walled by high mountain ridges; are of varied surface, no considerable amount being level; are exceedingly fertile, and have dense pine forests where elk, bear, and deer are still in abundance. Here and there are found mineral springs, and in Middle Park there are hot sulphur springs which are medicinally valuable.

C. has a remarkably regular and salubrious climate. The days are sometimes hot, but the nights are cool and without dews. The cold, except on the heights, is seldom severe, and it is rare to find the mercury down to zero. Snows are heavy and lasting on the mountains, but in the lower levels it is seldom deep, and very soon melts away. The dry atmosphere is so pure, that fresh meats are preserved by the simple process of drying. The late summer is almost rainless. The climate and air of C. are considered to be of great benefit to asthmatic and pulmonary sufferers, and the charming parks are likely to become the great natural sanitariums of North America. The various mineral springs are also adjuncts to the remedial nature of the climate. There are chalybeate, soda, and sulphur springs; and Manitou, where they are of soda, is already a considerable watering-place.

C. is very rich in minerals, gold and silver being the most important. Iron is also widely diffused, and zinc and copper are found. There is coal in abundance. The value of gold sent to the mints from C. up to Dec., 1878, was \$30,000,000, and of silver, \$16,000,000. The product of both in 1878 was about \$8,800,000.

Agriculture is growing rapidly. About half the land, except the mountains, is available, and the best grains are corn, wheat, rye, oats, and buckwheat. Root vegetables thrive remarkably, an acre of potatoes producing 500 bushels. Small fruits are raised, and grapes are abundant and of superior quality. Natural grasses thrive luxuriantly, and in most parts pasturage lasts all winter, so that C. will doubtless rank high for raising cattle and wool. There does not seem to be a great variety of trees, the pines, cedars, cottonwoods, fir, and kindred growth, forming most of the forests. Of flowers, the state has immense profusion. "The color of the landscape," says one traveler, "is green and flowers in summer, and yellow and flowers in winter—but always flowers." Among the pests of agriculturists are poisonous weeds, which in a few districts render the land useless for cattle; but a greater torment is the grasshopper, the ravages of which are in some seasons almost ruinous. To this pest must be added the Colorado beetle, or potato bug, which has not only devastated this and neighboring states, but carried its war upon the potato to and beyond the shores of the Atlantic.

Denver is the principal city and the capital of the state. Elections are biennial: the legislature meets biennially; senators are chosen for four years, and assemblymen for two, and both are paid \$4 per day for sessions limited to 40 days. The first vote for president will be given in 1880. The young state has not much of a history. That portion n. and e. of the Arkansas river and the Rocky mountains was a part of the Louisiana purchase; and the remainder came from Mexican territory ceded after our war with that country. Up to 1861, the territory was divided among the adjacent organized territories of Utah, New Mexico, Kansas, and Nebraska. In 1861, C. was organized as a separate territory. The early Spanish gold-hunters doubtless visited C. in the 16th c., but no settlements were made until within the past quarter of a century. About 1806, maj. Pike led a government exploring expedition into the region, leaving his memory in the name Pike's Peak, a high mountain near the geographical center of the territory. Subsequently, about 1820, another party under col Long, of the United States engineers, had some travel in C.; and in 1843, capt. John C. Fremont, "the path-finder," made full examination of the northern part. The discovery of gold in 1858, on the Platte, near the present city of Denver, started a flood of immigration, which was but little checked even during the rebellion. Towns sprang up as easily as in the Arabian stories. Denver, Golden City, Central City, Nevada, etc., started within a year, and the next year bore a large crop of these improvised "cities." The struggle with the rebellion and one severe Indian war had somewhat interfered with the growth of C., but, with all drawbacks, its progress has been very rapid.

There were 7 daily, 1 semi-weekly, 43 weekly newspapers, and 1 monthly magazine published in C. at the beginning of 1879. The latest statistics of education show 26,473 persons of school age (6 to 21); 16,641 pupils enrolled; 9,700 average attendance; 100 school-days in the year; 567 teachers; income, \$281,674; expenses, \$243,850. There is a normal department in the state university, at Boulder. There is a school of mines at Golden, a mining institute at Colorado Springs, and there is soon to be an agricultural

college. The state university in 1873 had 63 students; there is an institution for deaf mutes at Colorado Springs, and at the same place Colorado college (Cong.). The school lands amount to 3,740,000 acres.

The railroads in C., finished and in progress on the 1st of Jan., 1879, were: Denver and Rio Grande, from Denver to El Paso, Texas, 139½ m.; Pueblo and Arkansas Valley, 230 m.; Colorado Central, from Golden to Cheyenne, Wyoming Terr., with a branch to Denver, 184¼ m.; Kansas Pacific, Pueblo to Kansas state line, 194 m.; Denver Pacific, from Denver to Cheyenne, 96 m.; Denver, South Park and Pacific, from Denver to Webster, 78½ m.; and Denver and Boulder Valley, from Hughes to Boulder City, 27 miles.

The framers of the constitution of C. provided against the evils of special legislation very carefully. Sec. V. says: "The general assembly shall not pass local or special laws in any of the following cases: For granting divorces; laying out, opening, altering, or working roads or highways; vacating roads, town plots, streets, alleys, and public grounds; locating or changing county seats; regulating county or township affairs; regulating practice in courts of justice; regulating the jurisdiction and duties of justices of the peace, police magistrates, and constables; changing the rules of evidence in any trial or inquiry; providing for changes of venue in civil or criminal cases; declaring any person of age; for limitations of civil actions or giving effect to informal or invalid deeds; summoning or impaneling grand or petit jurors; providing for the management of public schools; regulating the rate of interest on money; the opening or conducting of any election, or designating the place of voting; the sale or mortgage of real estate belonging to minors or others under disability; the protection of game or fish; chartering or licensing roads or toll-bridges; remitting fines, penalties, or forfeitures; creating, increasing, or decreasing fees, percentage, or allowance of public officers; changing the law of discount; granting to any corporation, association, or individual the right to lay down railroad tracks; granting to any corporation, association, or individual, any special or exclusive privilege, immunity, or franchise whatever. In all other cases where a general assembly law can be made applicable, no special law shall be enacted." Women are recognized in affairs of education, and can vote at school district elections, and hold school offices. The legislature may make education compulsory. (For latest statistics, see Appendix.)

COLORADO, a co. in s.e. Texas, on the Colorado river, reached by the Buffalo Bayou, Brazos, and Colorado railroad; 905 sq.m.; pop. '70, 8,236—3,701 colored. The region is fertile and heavily wooded; productions, corn, cotton, sweet potatoes, etc. Co. seat, Columbus.

COLORADO RIVER, in Texas, rising near the New Mexican boundary and flowing s.e. through nearly the whole breadth of the state, emptying into Matagorda bay. It is about 900 m. long, and in winter is navigable by steamboats to the city of Austin, the capital of the state.

COLORADO, or COBU LEUBU, RIVER, rising in the Andes, and flowing s.e. through a portion of the Argentine Republic to the Pacific. It is about 600 m. long, and is said to be navigable for 120 m.; but it flows through a region of which little is known.

COLORADO RIVER, or COLORADO OF THE WEST, a large river rising in Utah, and flowing s. and w. through Utah and Arizona, and between Nevada and California and Arizona. The Colorado is formed by the junction of the Green and the Grand rivers of Utah in lat 38° north. The main tributaries of the Colorado are from the e., and include the San Juan, the Little Colorado, and the Gila. After leaving United States territory, the Colorado flows s. between the Mexican provinces of Lower California and Sonora, and discharges its waters into the extreme n. point of the gulf of California. The length of the Colorado, reckoning from the sources of Green river, is about 2000 miles. It is navigable for steamers a little over 600 m., nearly to the foot of the Grand cañon. There is a good harbor near the mouth of the river, used mainly by vessels in the Colorado trade. The remarkable features of this river are its cañons, which extend for more than 500 m. along its course. The most notable, and in itself a great wonder, is more than 200 m. long, with walls quite or nearly vertical, varying from 4,000 to 7,000 ft. high. The channel of the river is in some places 100 yards wide, and then perhaps suddenly narrowed to less than 20 yards. The fall of the stream is from 5 to 200 ft. in a mile, and the deep gloomy gorge is full of whirlpools and waterfalls. Below the cañons there is a valley from 2 to 8 m. wide, of fertile soil. In 1867, the cañons were descended by James White, the sole survivor of a party prospecting for mines. He escaped through them from hostile Indians, and floating on rafts of driftwood, came out scarcely alive. Again, in 1869, prof. J. W. Powell, with a corps sent by the United States government, explored the cañons through their whole length, suffering great hardships, and often narrowly escaping with life.

COLOR-GUARD, in the infantry, is a guard of eight corporals and the color-bearer in each regiment. They are attached to the right center company in the line.

COLOSSIANS, EPISTLE TO THE, is proved by external testimony and internal evidence to be a genuine production of the apostle Paul, and as such has been univer-

sally acknowledged except by a few modern critics who oppose but cannot overturn the general judgment. From the epistle itself it is plain that Paul wrote it when he was a prisoner; but whether at Rome or Casarea has been strenuously debated. While the internal evidence is perhaps evenly balanced for each place, the testimony of tradition is decided that the epistle was written at Rome. If that view be correct, its date is about 62 or 63 A.D. Another question much disputed is whether or not the church at Colossæ was founded by the apostle Paul. On the negative side the chief argument is derived from Paul's declaration concerning his anxiety "for the Colossians, Laodiceans, and all who had not seen his face." From this the conclusion is drawn that the Colossians were a part of those who had not seen him. On the affirmative side it is urged: 1. In reply to the preceding argument, that Paul's language, may fairly be interpreted to mean that his anxiety was for the Colossians and Laodiceans who knew him, and for the great multitude in addition who had never seen him. 2. That as it is stated in Acts that Paul went through Phrygia twice, preaching the gospel and revisiting the disciples, it is not probable that he passed by Colossæ and Laodicea, two of its important cities. 3. That his friendship for many prominent Christians at Colossæ, the cordial relations which existed between him and the church there, and his intimate acquaintance with their affairs, almost require the supposition that he had introduced the gospel among them. The epistle was probably written to counteract certain false teachings and tendencies which had appeared in the church and were, as Neander thinks, a combination of oriental theosophy and asceticism with Christianity in the effort to obtain a deeper insight into the spiritual world and a nearer approach to purity and intelligence than simple Christianity could yield. Such an effort was especially natural in Phrygia, the land of mystic rites and magical superstitions; and it is remarkable that in the 4th c. the council of Laodicea found it necessary to forbid angel worship, which had held its ground in that region. But in Paul's day the errors were only beginning to spring forth, and he opposed them by showing that in Jesus Christ Christians have all that they require; that he is the image of the invisible God, exalted above the angels, the creator and upholder of all things; that all Christians are complete in him and will be presented by him perfectly holy and unblamable before God if they continue steadfast in the faith; that while the prescriptions of a mere carnal asceticism are not worthy of their regard, there are high principles which should guide their consciences, and important duties which should govern their lives. The epistle so closely resembles that to the Ephesians, in doctrine, style, and manner, that a careful comparison of one with the other will greatly promote a correct knowledge of both.

COLQUITT, a co. in s.w. Georgia, on the Withlacoochee river; 600 sq.m.; pop. 70, 1654—137 colored. The region is level, and the chief productions are agricultural. Co. seat, Moultrie.

COLQUHOUN, PATRICK, 1745-1820; a Scotch author, chief magistrate of Glasgow, and for years a police magistrate in London. His works are *A Treatise on the Police of the Metropolis*; *A New System of Education for Laboring People*; *A Treatise on Indigence*; and *On the Population, Wealth, Power, and Resources of the British Empire*.

COLSTON, EDWARD, 1639-1721; a native of Bristol, England, successful in trade in the West Indies and elsewhere, and the accumulator of a large fortune, much of which he gave to the establishment and support of charities, especially in founding and sustaining almshouses and schools. He was a strong tory and a high churchman, intolerant of dissent and dissenters. He was three years in parliament.

COLT, SAMUEL, 1814-62; b. Hartford, Conn., where his father had a manufactory of silks and woollens. At the age of 14, Samuel ran off to sea and made a voyage to India, in the course of which he made a wooden model (said to be still in existence) of a revolving pistol, the forerunner of the "Colt's revolver." After the voyage, he applied himself to the study of chemistry, and lectured on that science in the United States and Canada. In 1835, he visited Europe and patented his invention in London and in Paris, and on his return secured American patents. In the same year, he founded the Patent Arms company for the manufacture of revolvers only. The scheme did not succeed, the revolver was not appreciated, and in 1842 the company became insolvent; no revolvers were made for five years; and none were to be had when gen. Taylor sent from Mexico for a supply. The government then ordered 1000 to be made, and this commission was the foundation of the inventor's wonderful success. The little factory at Whitneyville, where the first order was filled, gave way to larger and larger buildings, until his manufactories came to exceed in size and importance any establishment for the making of arms in the country. Not only pistols but rifles are made, with all the accessories of such weapons; balls, cartridges, bullet-molds, powder-flasks, etc. He was also the inventor of a submarine battery for harbor defense, and of a method of insulating submarine telegraph cables.

COLTON, CALEB CHARLES, 1780-1832; an English writer, a graduate of Cambridge, and a vicar. In consequence of his passion for gambling, he fled to the United States, but afterwards went to Paris, where he was correspondent for a London journal. He committed suicide through dread of a surgical operation which had become necessary to save his life. His works are *Hypocrisy, a Satirical Poem*; *Napoleon, also a poem*;

Lines on the Conflagration of Moscow; and Lacon, or Many Things in Few Words. The *Lacon* enjoyed remarkable popularity. He edited a newspaper in Washington, advocating the election of Clay for president; and published *Life and Times of Henry Clay; Public Economy for the United States; The Genius and Mission of Protestant Episcopal Churches in the United States;* and edited Clay's speeches.

COLTON, CALVIN, LL.D., 1789-1857; b. Mass.; graduated at Yale, and studied theology at Andover. He was ordained in 1815, and took charge of a Presbyterian church in Batavia, N. Y., but his voice failed, and he left preaching for work as a newspaper correspondent, writing letters from England. On his return he published *Four Years in Great Britain.* About 1835, he took orders in the Episcopal church, and published *Thoughts on the Religious State of the Country, and Reasons for Preferring Episcopacy.* He soon returned to secular literary work, and wrote a series of whig arguments called the *Junius Papers.*

COLTON, WALTER, 1797-1851; b. Vt.; graduate of Yale and Andover, and professor of moral philosophy and belles-lettres at Middletown, Conn. He was for many years a chaplain in the navy, and while in the service he gathered materials for *Ship and Shore in Madeira, Lisbon, and the Mediterranean; Visit to Athens and Constantinople; Land and Lee in the Bosphorus and Aegean;* and *Notes on France and Italy.* He was on the Pacific station at the beginning of the war with Mexico, and in 1846 acted as alcalde of Monterey. He built the first school-house and started the first newspaper in California, and a letter of his to a Philadelphia newspaper made the first public announcement in the United States of the discovery of gold at Sutter's Fort. Some years later he returned to Philadelphia, and published *Deck and Port,* and *Three Years in California.*

COLUBRINA, one of the sub-orders of serpents, distinguished from the viperina by being oviparous, and by a different arrangement of teeth and maxillary bones. The C. includes more than half the known species of snakes.

COLUMBIA, a co. in s.w. Arkansas, on the Louisiana border; 950 sq.m.; pop. '70, 11,397-3,718 colored. Has a level and fertile soil, producing, corn, cotton, etc. Co. seat, Magnolia.

COLUMBIA, a co. in n.e. Florida, on the Georgia border, bounded by the Suwannee and the Santa Fé rivers; 864 sq.m.; pop. '70, 7,335-3,228 colored. Surface level and soil sandy; productions mainly agricultural. Co. seat, Lake City.

COLUMBIA, a co. in e. Georgia, on the Savannah river and the South Carolina border, traversed by the Georgia railroad; 500 sq.m.; pop. '70, 13,529-9,449 colored. The surface is uneven; productions, agricultural. Co. seat, Appling.

COLUMBIA, a co. in s.e. New York, e. of the Hudson river, on the border of Massachusetts, traversed by the Harlem, the Hudson River, the Boston and Albany, and the Hudson and Boston railroads; 620 sq.m.; pop. '75, 17,270. The surface is varied, and the soil productive. There are warm springs at New Lebanon. The chief productions are rye, corn, oats, buckwheat, potatoes, hay, butter, wool, hops, and orchard fruits. Co. seat, Hudson.

COLUMBIA, a co. in n.w. Oregon, bounded e. and n. by the Columbia river, which separates it from Washington territory; 470 sq.m.; pop. '70, 863. Coal and iron are found. Co. seat, St. Helena.

COLUMBIA, a co. in e. Pennsylvania, intersected by the Lackawanna and Bloomsburg and the Catawissa railroads, and the North Branch canal; 375 sq.m.; pop. '70, 28,766. Spurs of the Alleghany range make the surface hilly and mountainous, but the valleys are fertile. Iron ore and limestone are abundant. Productions chiefly agricultural. Co. seat, Bloomsburg.

COLUMBIA, a co. in s. Wisconsin, intersected by the Wisconsin and Neenah rivers, and crossed by the Milwaukee and St. Paul railroad; 751 sq.m.; pop. '70, 28,802. The surface is rolling or hilly, and the soil fertile, producing the usual farming crops. Co. seat, Portage City.

COLUMBIA, a village, the co. seat, of Boone co., Mo., 115 m. w.n.w. of St. Louis, on a branch of the North Missouri railroad; pop. '70, 2,336-798 colored. The village is the seat of the state university.

COLUMBIA, a borough in Lancaster co., Penn., on the Susquehanna river at the terminus of the e. division of the state canal, and Philadelphia and Columbia railroad. There is also rail connection with Harrisburg, York, and Baltimore. Pop. '70, 6,461. This place is the principal depot for lumber brought down the Susquehanna in rafts.

COLUMBIA, the capital of South Carolina, in Richmond co., on the e. side of Congaree river, a short distance below its junction with Broad river, 137 m. n.w. of Charleston, and reached by three railroads; pop. '70, 9,288-5,295 colored. The river is navigable to this point. The city is handsomely laid out, and the surrounding views are very fine. There is a fine park, and the streets are well shaded. The state house,

built of granite, occupies a commanding situation near the center of the city. The executive mansion and the city hall are also attractive buildings. The city is well supplied with water and gas, and has a very considerable manufacturing industry. This place was purposely selected for the capital by a law passed in 1786, which provided for the foundation of a city. During the war of the rebellion, the old state house and its library of 25,000 volumes, a convent, several churches, the railroad depot, and a vast quantity of cotton were burned, whether by the confederate or union forces, or purposely, has not been satisfactorily determined.

COLUMBIA, a city in Maury co., Tenn., on Duck river, 38 m. s.w. of Nashville, reached by the Nashville and Decatur railroad; pop. '70, 2,550—1108 colored. Jackson college is situated here, and the place was the residence of James K. Polk before he was elected president, the stream giving him the title of "The Duck river statesman."

COLUMBIA COLLEGE. In Dec., 1746, an act of the colonial assembly was passed to raise money by public lottery for the encouragement of learning and towards the founding of a college in the city of New York. The amount thus raised was vested in ten trustees, seven of whom were members of the church of England and some of them vestrymen in Trinity church. A parcel of ground, w. of Broadway, bounded by Barclay, Church, and Murray streets, and the Hudson river, was granted by Trinity church as the site for the college. On a portion of this, at the foot of what was afterwards called Park place, the college edifice was built; the rest of it was leased and became a very valuable endowment. Dr. Samuel Johnson, of Connecticut, was chosen president, and in July, 1754, commenced the instruction of a class of students in the school-house belonging to Trinity church. Soon after, a charter was obtained, according to which the institution was called King's college, and was to be governed by a board of trustees, consisting of the archbishop of Canterbury, the first lord commissioner for trade and plantations, the lieutenant-governor of the province, several other public officers, the ministers of the five principal religious denominations in the city, and twenty-four private gentlemen. The new buildings were first occupied in 1760. In 1763, a grammar school was established. In March of that year, on the resignation of Dr. Johnson, the Rev. Dr. Myles Cooper of Oxford, Eng.—an accomplished scholar—was elected president. In 1767, a grant of land containing 24,000 acres was obtained from the province, but as it was within the bounds of what afterwards became the state of Vermont, it was ultimately lost. In Aug., 1767, a medical school was established. Before the war of the revolution, the emoluments of the college were largely increased by grants from the king and by contributions in England and America; and the course of instruction was extended so as to include "divinity, natural law, physic, logic, ethics, metaphysics, mathematics, natural philosophy, astronomy, geography, history, chronology, rhetoric, Hebrew, Greek, Latin, modern languages, the belles-lettres, and whatever else of literature may tend to accomplish the pupils as scholars and gentlemen." Among the earliest graduates were Robert R. Livingston, Gouverneur Morris, and John Jay. "All students, except those in medicine, were required, unless specially exempted, to live in the college building, the grounds of which were surrounded with a high fence whose front gate was constantly attended by a porter and was closed each evening in winter at 9 o'clock, and in summer at 10. The names of all students who came in after the hour were reported to the president." In the disputes which arose with England, Dr. Cooper wrote on the side of the mother country and was answered by an anonymous correspondent, who afterwards was found to be Alexander Hamilton, then a student. When the war commenced, Dr. Cooper returned to England, and the Rev. Benjamin Moore was chosen to take his place. In 1776, the building became a military hospital, the students were scattered and the college was broken up. On the return of peace, when its affairs were put in order, its name was changed to Columbia college, and its original charter, with the necessary alterations, was confirmed by the legislature of the state. DeWitt Clinton was among the first students under the new order of things. In May, 1787, Dr. William Samuel Johnson, an eminent lawyer and statesman, and son of the first president, was elected to the office. Among the students of this period, was John Randolph of Roanoke. In July, 1800, Dr. Johnson resigned, and was followed first by Dr. Wharton and soon after by bishop Moore, with the understanding that, on account of his ecclesiastical duties, he would not ordinarily take an active part in the business of the college. In 1810, the standard of admission was raised and a new course of studies arranged. In 1811, bishop Moore having resigned, in order that a president might be chosen who could give his whole time and attention to the office, Rev. William Harris was elected, with the addition of Rev. John M. Mason as provost. This office was created for Dr. Mason, and held by him only. He had charge of the senior class and gave new life to the lecture-room. He resigned in 1816. In 1814, a grant of land, containing about 20 acres, and then valued at \$5,000, was made to the college by the legislature, with the condition (afterwards repealed) that new college buildings should be erected on it. As this ground is between 5th and 6th avenues, and extends from 47th to 51st street, its value has, of course, vastly increased. Between 1817 and 1820, the old edifice was thoroughly repaired and additional buildings were erected. In 1829, a grammar school was established under the charge of the faculty, and a building for it erected within the grounds. This school was discontinued in 1864. In 1830, besides the original course of study, which was continued

entire, a scientific and literary course was established, the advantages of which, either entirely or in part, were offered to persons who were not matriculated students; but as it did not appear to find favor with the public, it was discontinued in 1843. At the same time the Gebhard professorship of the German language and literature was established upon the endowment made by the bequest of Frederick Gebhard. In 1847, the study of German was made voluntary for the two higher classes, and in 1857 for all the classes, with the addition of two annual prizes of \$30 each, and two of \$20 each, in order to stimulate attention to the study. The requirements of commerce having, after the lapse of a century, made the removal of the college from its original site necessary and desirable, new buildings were erected for it on the block extending from 49th to 50th street, between 4th and Madison avenues, and were occupied in 1857. At the same time the scope of instruction was greatly enlarged and several new professors were added to the faculty. In 1853, the law school was established. The distinguished jurist, chancellor Kent, had formerly been professor of law in the institution, and had delivered courses of lectures which attracted much attention and were of great service in preparing students to practice at the bar. He was followed by William Betts, LL.D., whose lectures were at length wholly discontinued. The object of the new organization was to give law students a systematic and comprehensive course of instruction, and to combine the constant drill of oral recitation with lectures by thoroughly qualified professors. The advantages expected from the system adopted have been attained. In 1860, a union was effected with the college of physicians and surgeons by which it became the medical department of Columbia college. The union is complete in the single respect that the united authority of the two institutions is necessary to the conferring of degrees; all diplomas bearing the signature of the president of C. college with those of the faculty of medicine. The school has an independent board of trustees, and its financial affairs are distinct from those of Columbia college. In 1864, the school of mines was established, with the distinctive purpose of furnishing the means for acquiring a thorough scientific and practical knowledge of those branches of science which relate to mining, and of supplying persons competent to conduct mining and metallurgical operations on scientific principles. Instruction is given in five regular courses of scientific study, viz.: Mining engineering, civil engineering, metallurgy, geology and paleontology, and chemistry, analytic and applied. In 1874, a new building for the school of mines, admirably adapted to its uses and work, was erected at a cost of \$150,000, and this was followed in 1878 by a building for the school of arts. Prizes, scholarships, and fellowships have been founded by the trustees and by benevolent associations and individuals, to be annually conferred on students who excel in various departments of the several schools. The school of mines is provided with a library whose value has been greatly enhanced by a judicious selection of standard and recent works in the various departments of science which it embraces, and in their adaptation to the specific wants of the school. There are also collections of specimens and models illustrating all the subjects taught in the school. A liberal appropriation is annually made for the increase of the library and collections. The law school has a choice library of nearly 6,000 volumes, including works in all departments of legal study. The general college library contains about 20,000 volumes. The formation of it began in 1754. A large number of valuable books were contributed by friends of the institution in London and Oxford as well as in this country. But during the revolutionary war the library was removed from the college building and a great part of it was ultimately lost. It has since been enriched from time to time both by liberal gifts and large purchases. In forming it the wants of the faculty and students have always been first considered, so that it has become eminently a *college* library. There are also collections in astronomy, mathematics, philosophy, architecture, typography, natural history, music, and the fine arts; and a good supply of biographical dictionaries, encyclopædias, and reviews. The institution has in all its faculties, including the president, an assemblage of 123 professors, instructors, and assistants; and in all its schools a total of about 1500 students.

COLUMBIAD, a cast-iron howitzer intended chiefly for use in sea-coast defense. The howitzer shell guns were remodeled in 1844, when the larger gun was first named *columbiad*. In 1861, the Rodman exterior form was applied to these and other heavy guns.

COLUMBIAN A. a co. in e. Ohio on the Ohio river and bordering on Pennsylvania, traversed by the Sandy and Beaver canal, and by the Cleveland and Pittsburg, the Pittsburg, Fort Wayne, and Chicago, and the New Lisbon railroads; 490 sq.m.; pop. '70, 38,299. The surface is level in the n. and hilly in the s. portion, and the soil fertile; productions chiefly agricultural. Co. seat, New Lisbon.

COLUMBO. See *CALUMBA*, *ante*.

COLUMBRETES, or *COLOMBRETES*, islands in the Mediterranean, off cape Oropesa, belonging to Spain. They are of volcanic origin, and form a picturesque group. There is one good harbor, and on the largest island there are a few inhabitants. The C. are important only as a military station. They have been a noted resort for privateers.

COLUMBUS, a co. in s.e. North Carolina, between the Waccamaw and Lumber rivers; 600 sq.m.; pop. '70, 8,474—2,948 colored. The surface is level and marshy;

productions, cotton, rice, etc. The Wilmington, Columbia, and Augusta railroad intersects. Co. seat, Whiteville.

COLUMBUS, a city in Georgia, the seat of justice of Muscogee co., on the Chattahoochee, 84 m. s.w. of Macon, reached by Muscogee railroad, and connected by railroad with Mobile. The river is navigable for the greater portion of the year, and affords ready communication with the neighboring cotton-growing districts. A change in the level of the river at C. furnishes a strong head of water, which has been turned to practical use by the construction of a dam, and other hydraulic contrivances. The city, which occupies an extensive area, is regularly laid out in wide and handsome streets. There are a court-house, a temperance hall, churches, and other public buildings. The chief industry is the cotton trade, but there are flour mills and manufacturing establishments. The town was laid out in 1828 on a portion of an abandoned Indian reservation. Pop. '70, 7,400—3,204 colored.

COLUMBUS, a village in Bartholomew co., Ind., 41 m. s.s.e. of Indianapolis, with which it is connected by railroad; pop. '70, 3,359.

COLUMBUS, a t. in Hickman co., Ky., on the Mississippi, 18 m. below Cairo; pop. '70, 1574—761 colored. The village is on a bluff, and was strongly fortified by the confederates early in the war of the rebellion; but the capture by the federals of forts Henry and Donelson, rendered C. useless, and the confederates abandoned it.

COLUMBUS, a city and seat of justice of Lowndes co., Miss., on the Tombigbee river, 132 m. n.e. of Jackson, having steamboat connection with Mobile, and a branch extending to the Mobile and Ohio railroad; pop. '70, 4,812—2,738 colored. The city is the shipping place for large amounts of cotton.

COLUMBUS, a city in Franklin co., O., the capital of the state, on the Scioto river, 100 m. n.e. of Cincinnati; pop. '70, 31,274. The city owes its importance almost entirely to the presence of the capitol and other state institutions. The streets are wide and regular, and finely shaded, and the squares and parks are handsomely improved. Among the prominent features are Goodale park, the city park, the gardens of the horticultural society, and Green Lawn cemetery. The chief public buildings and institutions are the state capitol, the penitentiary, and the asylums for the blind, the deaf and dumb, the insane, and the idiotic. There are also the U. S. arsenal, the city hall, the high-school building, the court-house, the almshouse, the opera-house, the odd-fellows hall, etc. Six or seven railroads center here; there are also horse railroads. The city was projected in 1812, and became the state capital in 1816.

COLUMBUS, **BARTOLOMEO**, 1432—1514; the eldest brother of the discoverer. In 1470, he was in Lisbon constructing maps and charts, and it is supposed that he went to the cape of Good Hope with Bartholomew Diaz. He was sent by his brother to England to seek the aid of Henry VII., but there is no evidence that he succeeded. After the discovery he was in favor as the brother of the admiral; and under him was lieutenant-gov. of the West Indies, in which position he showed discretion and courage.

COLUMBUS, or **COLON**, **LOUIS**, 1472—1579; a grandson of the discoverer. He withdrew his claim to the viceroyalty of India in 1540, and received in exchange the title of duke of Veragua and marquis of Jamaica, and a pension.

COLUSA, a co. in n. California, between the Sacramento river and the coast range of mountains; 2,376 sq.m.; pop. '70, 6,165. The surface is rough; quicksilver, sulphur, and salt are found. Agriculture is the chief business. Co. seat, Colusa.

COLWELL, **STEPHEN**, 1800—71; a native of Virginia, educated at Jefferson college, and admitted to the bar in 1821. He practiced law for several years, but left it for mercantile business. Besides many articles for reviews and magazines, he wrote a number of works on trade and finance, labor, banks, taxation, and kindred subjects.

COMAL, a s.w. co. of Texas, on the Cibola river, and intersected by the Guadalupe; 575 sq.m.; pop. '70, 5,283—377 colored. The surface is mountainous in some parts, and about two thirds is covered with live oak and mosquito. The greater portion of the people are Germans, and agriculture is their chief occupation. Co. seat, New Braunfels.

COMANA, a city of Cappadocia, in a deep valley of the Anti-Taurus range, through which the river Sarus flows. C. was celebrated in ancient times as the place where the rites of the goddess Ma (the Greek Enyo) were celebrated, with much solemnity and great magnificence, in a spacious and sumptuous temple, to which the city was scarcely more than an appendage. It was governed by the chief priest, who took rank next to the king. In Strabo's time, more than 6,000 persons were engaged in the services of the temple.

COMANCHE, a co. in s.w. Kansas, bordering on the Indian territory; 780 sq.m. It is as yet unsettled.

COMANCHE, a co. in n.w. Texas on the Leon river; 1050 sq.m.; pop. '70, 1000—24 colored. The surface is undulating and well timbered. Stock raising is the leading business. Co. seat, Comanche.

COMANCHES, American Indians, of the Shoshone family, known to the French as Padouques. When first known to Europeans, they occupied the regions between the upper waters of the Brazos and Colorado on one side, and the Arkansas and Missouri on the other. In 1783, they were brought to nominal submission by the Spanish general Anza, who killed 30 of their chiefs; but they again became troublesome, and continued to harass the district of Texas until they were settled in a reservation. In 1872, a portion of the tribe known as the Staked Plain Comanches had to be reduced by military measures. In that year they numbered in all about 3,300.

COMAYAGUA, a department in Honduras, 4,800 sq.m.; pop. about 80,000. The province occupies the w. central portion of the republic. The soil is rich, and well adapted to the cultivation of tropical vegetation. There are silver and copper mines, and various other minerals; and of timber there are pine, oak, mahogany, cedar, *lignum vitæ*, etc. In the mountains in the s.e. part of the province is a considerable population of Indians who are descended from the Lencas. The province is famous for raising superior breeds of cattle.

COMBACONUM, a t. in s. India 20 m. from Tanjore, and 30 m. from the sea; pop. 40,000. It is a large town, with wide streets, and is adorned with pagodas, gateways, and other edifices of considerable pretension. The gate pyramid is a building of 12 stories rising more than 100 ft., and is ornamented with a profusion of figures of men and animals done in stucco. One of the water tanks in the town is reputed to be filled with water taken from the Ganges once in 12 years, by a subterranean passage 1200 m. long. There is considerable trade, and weaving is one of the chief industries. The city was once the capital of the Chola race, an old Hindu dynasty.

COMBAT, SINGLE, the "Holm-gang," or island duel of the old Norsemen. A great many quarrels were settled by single combat, when, to guard against interference, the principals went alone to some small island (or holm), and there settled their quarrel by strength and skill. The idea is as old as war. In the Bible we read of Goliath challenging any Israelite to single strife. In the Iliad, Ajax challenges any opponent, and furthermore defies heaven. It was not uncommon in England, and was particularly invoked in charges of treason. The idea finds its modern and despicable expression in dueling.

COMET-FINDER, a telescope having a wide field of view but rather low magnifying power, used in searching for comets.

COMFORT, GEORGE FISK, b. New York, 1833; a graduate of Wesleyan university, especially known as a teacher. He was one of the leaders in organizing the American philological association, and also in establishing the metropolitan museum of art in New York, and has held a number of professorships. He is the author of a text-book for the study of German, and various essays upon linguistic and æsthetic subjects.

COMITAN', or COMITLAN, a t. in the state of Chiapas, Mexico, about 40 m. s.e. of San Cristobal. It has a fine church and a convent dedicated to St. Domingo. Agriculture is the chief occupation of the people.

COMITIA (*ante*). It was a fundamental principle of the Roman constitution that the supreme power was inherent in the citizens, though it might be delegated by them to hereditary or to elected magistrates. All important matters, however, had to be brought before the sovereign people, who could either ratify or reject, but without discussion, the proposals made to them. Such, at least in theory, and, during the best days of the republic, in practice also, was the function of these popular assemblies. As may be readily understood, different elements had the ascendancy among the Roman people at different periods of their history. So far as it was possible for a state exposed to so many and such various influences to be conservative of its political traditions, Rome, whether monarchical, republican, or imperial, was essentially so. But, under the force of circumstances, from time to time innovations were introduced which materially altered the position of the two political parties—the patricians and the plebeians—into which the state was early divided, and by whose dissensions it was long distracted, and in none of her institutions can the progress of the struggle between these rising factions be more clearly traced than in the motive and power of those assemblies, or comitia, by which the supreme authority of Rome was in succession wielded. It is usual to describe the Roman comitia as of three kinds, named from the mode in which the people were organized and in which they voted—the comitia curiata, or assembly of the curiæ; the comitia centuriata, or assembly of the centuries; and the comitia tributa, or assembly of the tribes. To these some add a fourth, the comitia calata (from *calare*, to call); but as this assembly had neither political functions nor a separate organization, it is unnecessary to do more than mention the name.

1. COMITIA CURIATA.—The assembly of the curiæ is believed to have been coeval with the rise of Rome itself, and its origin is therefore rightly ascribed by tradition to the mythical founder of the city. The system seems to have been an essential part of the communities, of which Rome was originally only one. Its primary object cannot now be satisfactorily determined; but the purpose for which it came to be employed is sufficiently clear. From a very early period the Roman curiæ, or "wards," as they may be called, numbered 30, being 10 for each of the three once independent communi-

ties—the Rhamnians, the Tities, and the Luceres—from whose amalgamation the Roman people sprang. At first, these curiæ were probably made up extensively of the freeholders, or patricians, as the freeholders were afterwards designated, on whom devolved exclusively the right and the duty of bearing arms. It has been maintained by some that the class of dependents called by the Roman writers clients, as well as the burgesses or citizens, had a right to vote in the assembly of the curiæ. No direct evidence, however, can be brought forward in support of this supposition, which, in the nature of the case, is highly improbable; and, if allowed to be present at all, they were very likely nothing more than spectators, or, as their name is said to imply, “listeners.” In an assembly each had one vote, and determination was by the majority of the individual voters in the different curiæ. As the number of the latter was even, and no provision was made for deciding in case of there being an equal division on any question, it would seem as if this function had not been thought of in fixing the number of the curiæ, or had been subordinated to some other consideration.

2. **COMITIA CENTURIATA.**—By the operation of obvious causes, a great increase soon took place in the number and influence of the dependent members of the Roman commonwealth. As a natural consequence, the way was paved for a reform of the constitution, though we may well conceive that the step was hastened by the gradual thinning of the ranks of the old freeholders in the incessant wars in which Rome found herself involved with her neighbors. Thus, in the course of time a new class, the plebeians of history, arose out of the clients, preponderating in numbers, and by no means destitute of wealth. Though this class had not, perhaps, the rights of citizens, it was exempt from service in the field; and while the political inferiority of its members must have been galling, their immunity from the chances of war can hardly have been looked upon with equanimity by the ruling faction. It was to redress this twofold grievance that the reform ascribed to king Servius Tullius is generally believed to have been effected. But the whole scheme was one skillfully devised to assign duties to the plebeians rather than to bestow upon them rights, and it was evidently the work of a statesman who was in the interest of the patricians. The chief authorities for the details of the arrangement are Livy and Dionysius, whose accounts, though they differ in some particulars, agree in the main. We must bear in mind, however, that both of them describe the assembly of the centuries rather as it existed in their own day than as it was first constituted. Livy gives the whole number of the centuries as 194; Dionysius makes them 193. The voting in the assembly was by centuries, each possessing a collective vote exactly as in the case of the curiæ. It was so arranged that the 18 centuries of equities and the 80 centuries of the first class voted first. If they were agreed upon a question at issue, the other side were not called upon to vote at all. As the centuries, though nominally “hundreds,” probably contained in the first class fewer, and in some of the other classes certainly many times more than that number, it is plain that in the assembly by far the largest share of power was retained in the hands of the wealthy, of whom the original burgess element would long form the main portion. How far we have in this scheme merely a modification of an earlier arrangement, there are no means of determining. As Mommsen remarks, it is more than probable that the original assessments were laid upon land. Be this as it may, the Servian reform was originally a new military rather than a new political organization, its author intending that the privileges of the patricians assembled in the curiæ should remain as before. But its results were different from what had been anticipated. By a process easily understood, the rights of the curiæ gradually passed to the centuries. The assembly of the former continued, indeed, to meet, but the assembly of the latter became thenceforth the chief guardian of the rights of the Roman people.

3. **COMITIA TRIBUTA.**—The further development of the democratic element in the Roman constitution, consequent on the change just described, soon led to a demand for greater changes in the same direction. The tribunes of the people, now the acknowledged leaders of the democracy, took advantage of an ancient division of the original territory of Rome into tribes, to give greater prominence to this element than it had yet possessed. These tribes, 30 and afterwards 35 in number, which, as is supposed by some, had already supplied a basis for the arrangement into curiæ as well as classes, seem to have at first existed for purely local purposes. But the leaders of the people succeeded at length in forming them into a political union entitled to exercise certain functions, chief among which was the election of the inferior magistrates, and the approval and rejection of such legislative measures as affected the interests of the plebeians as a class. Whether the assembly of the tribes was composed of plebeians only, or of all, whether patrician or plebeian, living within certain limits, has not been ascertained; but the balance of opinion inclines to the hypothesis that it consisted of plebeians alone. After the rise of this new power, it became a matter of great difficulty to determine what questions were to be submitted to the tribes, and what to the centuries, each claiming to be the real representatives of the whole body of the people. A solution appears to have been sought and found in some combination of the two rival assemblies. At what time this change took place, and what was its exact nature, are matters which remain involved in the greatest obscurity. All that can be said is this: the plebeians, either by means of their own assembly, or by some use of it to counterbalance the power of the patricians in the assembly of the centuries, ultimately gained what they had so long aimed

at—a position of supreme importance to the republic. When the wealthier classes found their influence thus neutralized, they ceased to attend the comitia altogether, and the popular will was represented by the lower classes alone. A period of moral and political corruption followed, ending in the military despotism of the Cæsars. Under the first emperors the form of calling the assemblies together was still observed, but the people met no longer to control their chief ruler, but simply to receive information as to what he had done. Even this form was by and by discontinued, and in the last days of the empire the comitia was an institution known only as one of the traditions of the past greatness of Rome. See *ROME, ante*.

COMMANDER (*ante*), in the U. S. navy, an officer next in position below cap., equivalent to lieut.col. in the army.

COMMANDER-IN-CHIEF (*ante*). In the United States, the president is the commander-in-chief of all the land and naval power of the nation. The immediate commander of the land forces is the "general of the army." In most of the states, the governor is commander-in-chief of the militia.

COMMANDERY, the title of the meeting or meeting-place of freemasons who have reached the degree of knights templar. Its origin was with the knights of Malta of the middle ages, and was first applied to sums saved from the revenues of the order for the support of war against the Moslems. It soon came to mean persons and places rather than things, and the "grand commander" became the next office to the grand master. Among the religious establishments suppressed in England by Henry VIII. were more than 50 commanderies of knights templars.

COMMANDMENTS OF THE CHURCH are certain rules laid down by Roman Catholic ecclesiastical authority which have almost the force of scripture commandments. The chief of them require the observance of Sundays and holy days of obligation, attendance at mass, rest from servile work on certain days, abstinence from flesh and but one meal on fast days, confession of sins at least once a year, the reception of the sacrament once a year, contributions to the support of pastors, and certain regulations concerning affinity and times in marriage.

COMMENSAL, a term denoting animals (not parasites) which attach themselves to other animals to share their prey. The term is equivalent to "table companion," and was applied to court-officers in France who had their meals at the king's table.

COMMERCE. The term C. in its general acceptation means international traffic in goods, or what constitutes the foreign trade of all countries as distinguished from domestic trade. The first foreign merchants of whom we read, carrying goods and bags of silver from one region to another, were the Arabs, the reputed descendants of Ishmael and Esau. Their trade was by land. The first maritime carriers of goods were the Phenicians, who dwelt in a narrow strip of land on the e. shore of the Mediterranean. They founded Tyre and Sidon, of whose opulence there are abundant proofs both in sacred and profane history. Launching their oared barks on the waves, and steering close along the shore so as to be able to take shelter in the nearest harbor on the approach of a storm, they established an easier and safer passage between Egypt and Syria than had before been known. The corn and wine of the Nile, and the oil, silk, dyes, and spices of western Asia, flowed through their hands. From carriers they became merchants, and to merchandise they added manufactures. In the days of Solomon their vessels penetrated the Red sea, and brought to that king the wealth of Ophir. They traversed the shores of the Mediterranean, established colonies in the Greek islands, and founded Carthage, one of the most noted commercial cities of the ancient world. The Phenicians flourished greatly until the capture of Tyre by Alexander, 332 B.C. Then the inhabitants who survived a long siege were killed or sold into slavery, and the very name Phenician disappears from history, absorbed, doubtless, in the rising glory of the cities of Greece—Athens, Corinth, Argo, and their colonies; of Carthage, then in full fame; and of Alexandria, the great seaport founded by the conqueror.

While Rome was giving laws and order to the half-civilized tribes of Italy, Carthage, operating on a different base and by other methods, was opening trade with less accessible parts of Europe. The strength of Rome was in her legions, but that of Carthage in her ships; and her ships could reach realms where legions were powerless. Her mariners had passed the mysterious strait into the Atlantic and established the port of Cadiz. They founded Carthage and Barcelona, and had depots and traders on the shores of Gaul. This prosperity of their C. led to wars with martial Rome, and, 146 B.C., the great city of Carthage, more than 20 m. in circumference, and containing a million of inhabitants, was utterly destroyed. In the same year the Romans captured and burnt Corinth, which was then an important commercial city; and 60 years later, Athens met a similar fate. These disasters almost annihilated sea commerce. Land C. also suffered a disastrous blow soon after the fall of Athens, in the capture by the Romans of the important city of Palmyra, when the walls were razed, the people killed or dispersed, and the famous queen Zenobia taken to Rome a prisoner.

The repeated invasions of Italy by the Goths and Huns gave rise to the founding, for defense and for trade, of the city of Venice, about the middle of the 5th c.; a city that for more than a thousand years stood foremost in the trade of the world. The Ven-

tians traded with Constantinople, Greece, Syria, Egypt, India, and Arabia. They became rulers in the Morea, in Candia, and in Cyprus. It was in Venice that the first public bank was organized; that bills of exchange were first negotiated, and funded debt became transferable; that finance became a science, and book-keeping an art. We cannot trace the steps of C. during the middle ages; nor is it important; in fact, international trade to any considerable extent was unknown. But the 15th c. showed a wonderful expansion of discovery, and consequently of trade. The mariner's compass made distant voyages possible on the open sea. In 1418, the Canary islands were colonized by the Portuguese; in 1481, the Azores were discovered; in 1486, the Guinea coast of Africa was made known; and in 1497, Vasco da Gama passed round the cape of Good Hope to Zanzibar. Before the end of the century, Columbus had thrice crossed the Atlantic, touched at San Salvador, discovered Jamaica, Porto Rico, and the isthmus of Darien, and had seen the waters of the Orinoco in South America. Meanwhile, Cabot, sent out by England, had discovered Newfoundland, Labrador, Nova Scotia, and Virginia. Nearly all this daring enterprise had for its prime object the finding of some easy route to the fabulously wealthy east, to India and China. But a century elapsed before the English fixed their first establishment or factory in India. The discovery of the new world, however, while so diligently searching for a sea route to the old one, was destined to change the course and the nature of trade. The Spaniards overran South and Central America, eager above all things for conquest and for gold; the French opened Canada and the great Mississippi; in 1621, the Dutch were fairly established in what is now the foremost commercial city of the two continents, and second to but one in the world in trade and importance—New York. About the same time the English colonized Virginia and New England.

From such rapidly spreading exploration and colonization there necessarily arose new wants, new products, new manufactures, and rapidly increasing trade; interrupted more or less by wars, but in the main marching steadily and rapidly on. The present century has witnessed an extension of the commercial relations of mankind to which there is no parallel in history. In 1819, the first steam-vessel crossed the Atlantic ocean, from Charleston, S. C., to Liverpool, and a similar adventure from England to India was accomplished in 1825. The application of steam to transportation and manufacturing immensely enlarged the capacity and needs of commerce. Another astonishing impulse to trade came with the discovery of gold in California and Australia. The two events were almost coincident, and came when a general extension of trade had already been ten years in progress. The first effect was to produce a great emigration to the regions in which the gold-fields were situated, and this was followed by large exports of goods to the same quarters, which, as usually happens when business falls out of the ordinary mercantile course, was much overdone, and ended in heavy loss to many shippers. Abundance of labor had been supplied with unwonted celerity to the gold-fields, and as the labor was not unremunerative, and in many cases was rewarded by large findings of gold, the commotion in emigration, shipping, and traffic was sustained for a number of years. The coffers of the great banks were filled with new supplies of gold, and this imparted confidence to banking operations by which the money was soon distributed. All this was calculated to give additional impulse and extension to the commercial forces already in motion; there was an increased demand for goods; much labor had been transferred from old seats of industry to new fields, and there was rise of wages as well as of prices. The California and Australia mines remain productive, though in a reduced degree, and their most permanent effect on C. will be found in the fact that they helped to build California into a populous and prosperous state, and to make the Australian colonies a growing empire.

Great as has been the effect of these gold discoveries upon C., they sink into comparative insignificance before an influence already alluded to, and that is steam. There is little use to descant upon steamships and railways, and the later important agency of the telegraph, all equally marvelous in their power of facilitating C., and in the rapidity of their construction to this end. In 1839, the ocean steamers of the world might have been counted on the fingers of one hand. To-day, all the great maritime states have lines and fleets of sea-going steamers, enormous for bulk and power, threading the great rivers, cleaving every sea, and gulf, and strait, and going and coming from every considerable port on the earth. Great Britain alone has more than 1600 such steamships employed wholly in foreign trade. No one knew until 1825 that goods and persons could be hauled over the land by steam. In this year, 1880, there are in the United States alone, 85,000 m. of railroads in operation, built at a cost of \$4,762,000,000. The rapid development of the telegraph is more wonderful in an age of wonders than that of steam. It was in May, 1844, that the first line of magnetic telegraph (Morse's) was used in this country, between Washington and Baltimore, about 40 miles. There are now almost 100,000 m. of line and over 220,000 m. of wire in the United States alone, not including railroad telegraphs. Continents and nations are linked by submarine cables, and it is actually easier to-day for a merchant to send an order to and receive an answer from Calcutta than it was 40 years ago to achieve the same feat between New York and Brooklyn. Still another modern improvement—made possible by the telegraph—has a beneficial effect upon C.; and that is the weather service established in the United States, Great Britain, and some other European countries. There can be no doubt that C. by sea has been rendered much more secure by the knowledge

of the state of the weather at a distance, and the probabilities of what it is likely to be in any given place, now published in all centers of trade.

By these inventions and in the natural course of progress, C. has acquired a security and extension in all its essential conditions, of which it was void in any previous age. It can never again exhibit the wandering course from route to route, and from one solitary center to another, which is so characteristic of its ancient history, because it is established in every quarter of the globe, and all the seas and ways are open to it on terms fair and equal to every nation. Wherever there are population, industry, resource, art, and skill, there will be international trade. C. will have many centers, and one may relatively rise or fall; but such decay and ruin as have smitten many once proud seats of wealth into dust, cannot again occur without such catastrophes of war, violence, and disorder, as the growing civilization and reason of mankind, and the power of law, right, and common interest forbid us to anticipate. [Portions of this article are, with modifications, from *Encyclopædia Britannica*, 9th edition.]

COMMISSA'RIAT (*ante*). In the U. S. army, the C. is in charge of the "commissary of subsistence," an officer with the rank of brig.gen.

COMMITTEE (*ante*). In the U. S. congress and in state legislative bodies, the forming and management of committees are almost the same as in the English parliament, except that in committee of the whole house any man may preside (except the speaker), while in the house of commons there is a regularly chosen chairman of all committees of the whole house.

COMMODORE (*ante*), in the U. S. navy first recognized by law in 1862, but long before used by the people as an honorary title. The rank is above capt. and below rear-admiral.

COMMON COUNCIL, ordinarily means, in American cities, the local legislative body, consisting of the boards of aldermen and assistant aldermen, or councilmen, or selectmen. In Boston, and a few other cities, the aldermen form a different board from the common council.

COMMONER, in England applied to all citizens except the hereditary nobility. John Hampden was called the "great commoner," and the title was also given to the elder Pitt before he became a member of parliament. In Oxford, students of the second rank who pay board are called commoners.

COMMON LAW (*ante*), in the United States is in all essentials the same as the common law of England, from which it differs only in the forms of administration. It covers those principles, usages, and rules of action applicable to the government and security of property and of person, which do not rest their authority upon any positive statute or enactment.

COMMON SCHOOLS. The Puritan settlers of New England built the school-house by the side of the church even before they had provided permanent homes for themselves. Their first schools (in which Latin was taught) were, however, free in part only, and to those who had contributed to found them. The free public school was of New England origin. A Massachusetts law of 1643 required that every township containing 50 families should have a school for all the children; the tuition to be paid either by their parents or by general provision. In Hartford, Conn., in 1642, a school was instituted and funds for it provided from the public treasury; and in the following year a vote was passed that "the town shall pay for the schooling of the poor and for all deficiencies." New Hampshire and Vermont, in like manner, provided for schools in every hamlet that could furnish employment and support to a teacher. Even amidst the almost constant conflicts with the Indians and French in which the colonies were involved, C. S. were steadily maintained. In 1670, one fourth of the annual revenue of the colony of Connecticut was spent for the support of the common schools. In 1795, the state of Connecticut devoted the money obtained by the sale of her western reserve lands, amounting at the time to \$1,200,000, to the support of her common schools. Massachusetts made a similar use of a part of her lands in Maine. Within the last 60 years the system of C. S. has been extended through the northern and north-western states, and the course of instruction has been greatly enlarged. As each state has control of its own schools, there is great variety in the details of their management. The following leading principles are the same in all: 1. A system of graded schools embracing primary, grammar, and high schools. 2. State superintendents who determine by examinations the qualifications of the teachers and watch over the efficiency of the instruction given. 3. Uniformity of text-books. 4. Public examinations. 5. School libraries and illustrative apparatus. 6. Improved construction and furnishing of school-houses. 7. Access to the school for all children of suitable age. 8. Normal schools for the training of teachers. Some of the states have funds to aid them in supporting their schools. In the western states these funds are generally large, arising from the sale of lands granted by the general government, and, in some instances, also by the state. Such grants by the United States for school purposes amount to 68,000,000 of acres, valued at more than \$60,000,000. In many of the states the attendance of children, within specified ages, and for at least a part of the year, is compelled by law. Before the civil war there was no general and well-ordered system of C. S. in the south.

ern states. But in their new state constitutions they have made provision for them, and are now pressing forward the work. In 1867, a national bureau of education was established by congress for the purpose of collecting statistics and diffusing information on the whole subject, so as to aid the people of the United States in the adoption and support of the best school systems, and to advance in other ways the cause of education through the land. In the year 1878, so far as reported, the school population of the states and territories was 14,617,000; the public elementary schools had 9,213,000 pupils enrolled, 262,000 teachers, and an income of \$92,683,000. See EDUCATION, *ante*.

COMMONWEALTH OF ENGLAND, the title of the government of England under Cromwell, from the death of Charles I., Jan. 30, 1649, to the restoration of Charles II., May 29, 1660. (See CROMWELL, OLIVER, *ante*.)

COMMUNE, the smallest administrative division of France, much like the town and village local government organizations in the United States. The C. is a legal body, and can buy and sell property, contract debts, and appear in the courts. The chief magistrate is the *maire* (mayor), who is assisted by one or more adjuncts, and a deliberative assembly, called the *conseil municipal*. As the agent of the national government, the *maire* is charged with the local promulgation and enforcement of laws and decrees; and, as a member of the municipality, he has to attend to the police, the revenue, and the public works of the C., and in general to act as the representative of the corporation. In communes that rank as the administrative centers of a department, arrondissement, or canton, or that have a population of more than 3,000, the *maire* is nominated by the central government; in those not so distinguished, the appointment is made by the prefect of the department. The councilors are elected by the votes of the communal electors, and hold office for five years.

COMMUNE DE PARIS, the organized socialists and workingmen who revolted against the French government March 18, 1871, a few days after the evacuation of Paris by the Germans, subsequent to the long siege and capture. The national guard of Paris were permitted to retain their arms, and a large proportion of them joined in support of the commune. The more prominent among the leaders of the commune were Felix Pyat, Flourens, Assi, Delescluze, Paschal, Grousset, gen. Cluseret, Dombrowski, Arnoud, Jules Valles, Blanqui, and Rochefort. Their principles are a subject of much dispute, but it is fair to quote this definition by one who belonged to the fraternity: "Their philosophy is atheism, materialism, the negation of all religion; their political programme is absolute individual liberty by means of the suppression of government, and the division of nationalities into communes more or less federated; their political economy consists essentially in the dispossession, with compensation, of the present holders of capital, and in assignment of the coin, land, etc., to associations of workmen." The same writer affirms that "the central committee of the national guard, exclusively composed of workmen, members of the Internationale, has taken the initiative, and alone has the merit of the movement." The national guard being divided in sentiment, the communists gained control of the city. Convicts released from the prisons, and foreign refugees, joined them. The more intelligent of the leaders, who had some moral scruples, were soon discarded, and desperadoes and outlaws obtained complete control. An election for the choice of members of the commune was held on the 26th of March, but the friends of order declined to vote, and the insurgents had an easy triumph. After the result was ascertained, the leaders issued a proclamation in these words: "The central committee has remitted its powers to the commune citizens; your commune is constituted. The vote of the 26th of March has sanctioned the victorious revolution," etc. The government at Versailles sent a force to suppress the insurrection. On the 2d of April, a body of insurgents marched against Versailles, but were repulsed at Meudon. Gustave Flourens, one of the commanders of the commune, was soon afterwards killed. The army of the republic, under command of marshal McMahon, began the siege of Paris. Dombrowski, Cluseret, Rossel, and Delescluze, successively held command of the insurgent forces. The commune was torn with dissensions, which greatly diminished their power of resistance. On the 5th of April, they arrested the archbishop of Paris and others, and imprisoned them as hostages. Possessing several forts in the environs, the insurgents made an obstinate resistance to the advance of McMahon; but they were at length overcome. After capturing several of the forts, the besieging army, 90,000 strong, entered Paris by several gates on the 22d of May, and inclosed the insurgents in a semicircle; but the latter fought for five days behind barricades, committing atrocious acts of cruelty and vandalism. They set fire to the public buildings, and threatened the destruction of the ancient monuments and treasures of art. Among the fine edifices which they burned were the Tuileries, the Palais de Justice, the Palais Royal, and the Hôtel de Ville. The Louvre was partly consumed. They shot Darboy, archbishop of Paris; Boujeau, president of the court of cassation; and others whom they had held as hostages. In the execution of their incendiary schemes they ignited petroleum, gunpowder, and other explosive materials in many places. At length, on the 27th of May, the contest ended; 25,000 communists were taken prisoners, some of whom were put to death, while a number were sentenced to deportation. Delescluze was killed while fighting in the street. Most of the ringleaders who survived the battles

were put to death. All but a very small number of those who were banished were amnestied in 1880.

There was a still older commune in Paris—that of 1790, which was created by law, but soon proved stronger than its creators. This commune bore a leading part in the worst outrages of that terrible era. See PARIS, *ante*.

COMMUNICATIO IDIOM'ATUM, a term denoting the doctrine that the one person of Christ has conjoint possession of the attributes of two natures; the two natures being inseparable, so that whatever in either nature is proper to Christ in the abstract, belongs to him in the concrete.

COMMUNION IN BOTH KINDS. It is universally acknowledged that in the primitive church, at the celebration of the Lord's supper, both the bread and the cup were distributed to all who communed. Sects which, like the Manichæans, discarded the wine were condemned as irregular. As, however, there was frequent occasion to carry the consecrated elements from the church to sick persons at their homes, it became customary, for convenience, to dip the bread in the wine, administering, in this way, both in one. At length it was thought more convenient to omit the wine. In the 13th c., Robert Pulleyn, of Oxford, approved the custom of giving to the laity the bread only, in order, as was said, to avoid the danger of spilling the wine. This view was adopted by the scholastic theologians, who taught that Christ was wholly present in the sacrament under either form, and that, consequently, one form was sufficient for a valid observance of it. Thomas Aquinas and Bonaventura, especially, advocated the administration of the communion under one form only. In proportion as the doctrine of transubstantiation was developed, it became the practice of the church to withhold the cup from the laity. Against this the reformers of the middle ages, as the Waldenses, Huss, Wyckliffe, and Savonarola, protested. The Protestant churches, also, were united in regarding the communion in both kinds as essential to the right observance of the ordinance. The practice of the Roman Catholic church was confirmed and made binding by the council of Trent in 1563. It has always since been adhered to, and is defended on the ground that the cup is not necessary to the completeness of the sacrament. Since the whole Christ, as to his body, soul, and divinity, is not only in each species, but in every particle of both, he who receives the consecrated bread receives the whole Christ, and derives all the benefit from communing that the sacrament can afford. But while this law is uniformly enforced in the western Roman Catholic church, those portions of the eastern churches that acknowledge the supremacy of the pope are allowed to retain both forms; and the same toleration has been offered to Protestants in order to facilitate their return into the unity of the church under the Roman see. See LORD'S SUPPER, *ante*.

COMMUNISM (*ante*). So far as America is concerned the theory and practice of C. have made little progress. Socialism has been tried, and with some degree of success; but community of property and of interest has been emphatically rejected. In a land where all men are free, where all roads to prosperity and office are open to all men, where there is no caste, and, since the extinction of slavery, no degree of citizenship (except as relates to Indians and Chinese), there is little opportunity for those who would organize public robbery because one man has more acres or more dollars than another. Indeed, nearly all that has been heard in the United States in favor, or even on the subject of C., has been forced upon the public ear by discontented spirits from abroad. It is waste of time to prate about tyranny and kings where every man wears a crown. But since half a dozen screaming and worthless grasshoppers will make more noise in a clover field than ten thousand industrious and honest bees, we must perforce consider their noise and its purport. The very corner-stone and starting-point of the communists is the overthrow of the institution of private property, "that primary and fundamental institution on which, unless in some exceptional and very limited cases, the economical arrangements of society have always rested." Naturally the opinion that a communist is one who has no property to lose, and who therefore advocates a general re-distribution of wealth, is widespread and popular. Such movements against property have taken place in almost every country and in nearly every age. They have originated with men as far apart in time and intellect as Plato and Robert Owen, and with men as different in social surroundings as sir Thomas More, St. Simon, and father Rapp. The mention of these names goes far to refute the popular idea that communists are always needy adventurers, seeking to possess themselves of the property of others. Among the modern leaders of C. who have actually reduced to practice the theoretical schemes of Plato's *Republic* and sir Thomas More's *Utopia*, have been some who have devoted great wealth and rare organizing faculty to the realization of their plans for the reconstruction of society. It has been estimated that during his life Robert Owen devoted as much as \$300,000 of his own private fortune to the promotion of communistic schemes. He had a wonderful faculty for business, and to him the accumulation of money was natural and easy. The great pecuniary sacrifices made by him in the cause of C. showed that he at least was animated by motives the direct opposite of the selfishness and sloth generally attributed to the advocates of the system. Much the same remarks, so far as pecuniary interest is concerned, might apply to St. Simon of France, and to John Humphrey Noyes, the head of the Oneida community, in New York. In many countries

the men foremost in thought and action have been more or less attracted by communistic schemes. These schemes have been so various in scope, and the amount of detail with which they are described by their authors is so considerable, that it is difficult to get at the underlying principle common to them all. It must be remembered that the philosophic C. of Plato and More has been adopted to the wants of actual daily life by rough German peasants and Lancashire cotton-weavers; and though, of course, the actual has differed much from the ideal commune, yet their resemblance is, under the circumstances, very much more striking than their divergence. In Plato's *Republic* the dissatisfaction is not limited to merely economical conditions. In his examination of the body politic there is hardly any part which he can pronounce healthy. He would alter the life of citizens of his state from the moment of birth. Children would be taken away from their parents and nurtured under the supervision of the state. The old nursery tales, "the blasphemous nonsense with which mothers fool the manhood out of their children," are to be suppressed. Dramatic and imitative poetry are not to be allowed. Education, marriage, the number of births, and the occupation of the citizens, are to be controlled by the guardians or the heads of the state. Perfect equality of conditions and careers is to be preserved. The women are to have similar training with the men, and no career and no ambition is to be forbidden to them. The inequalities and rivalries between rich and poor are to cease, because all will be provided for by the state. Other cities are divided against themselves. "Any ordinary city, however small, is in fact two cities, one the city of the poor, the other of the rich, at war with one another," but this ideal state is to be a perfect unit; although its citizens are divided into classes according to their capacity and ability, there is none of the exclusiveness of birth, and no inequality is to break the accord which binds all the citizens, both male and female, into one harmonious whole. The marvelous comprehensiveness of the scheme for the government of this ideal state makes it belong as much to the modern as to the ancient world. Many of the social problems to which Plato draws attention are yet unsolved, and some are in process of solution in the direction indicated by him. He is not appalled by the immensity of the task which he has sketched out for himself and his followers. He admits that there are difficulties to be overcome, but he says "Nothing great is easy." He refuses to be satisfied with half measures and patchwork reforms. "Enough! my friend!" he exclaims: "But what is enough when anything is wanting?" These sentences indicate the spirit in which philosophical as distinguished from practical communists, from the time of Plato until to-day, have undertaken to reconstruct human society. Sir Thomas More's *Utopia* has many of the characteristics of the *Republic*. There is in it the same wonderful power of shaking off the prejudices of the place and time in which it was written. The government of Utopia is described as founded on popular election; community of goods prevailed; the magistrates distributed the instruments of production among the inhabitants, and the wealth which resulted from their industry was shared by all. The use of money and all outward ostentation of wealth were forbidden. All meals were taken in common, and they were rendered attractive by the accompaniment of sweet strains of music, while the air was filled with the scent of the most delicate perfumes. More's ideal state differs in one important respect from Plato's. There was no community of wives in Utopia. Thus a oneness of the family relation and fidelity to the marriage contract were recognized by More as indispensable to the well-being of modern society. Plato, notwithstanding all the extraordinary originality with which he advocated the emancipation of woman, was not able to free himself from the theory and practice of regarding the wife as part and parcel of the property of her husband. The fact, therefore, that he advocated community of property led him also to advocate community of wives. He speaks of the "possession and use of women and children," and proceeds to show how this possession and use must be regulated in his ideal state. Monogamy was to him mere exclusive possession on the part of one man of a piece of property which ought to be for the benefit of the public. The fact that he showed no capacity to think of wives otherwise than as the property of their husbands only makes it the more remarkable that he claimed for women absolute equality of training and careers. The circumstance that communists have so frequently wrecked their projects by attacking marriage and advocating promiscuous intercourse between the sexes may probably be traced to the notion which regards a wife as being a mere item among the goods and chattels of her husband. It is not difficult to find evidence of the survival of this ancient habit of mind. "I will be master of what is mine own," says Petruchio; "she is my goods, my chattels." In More's *Utopia* we find the singular anomaly of slavery existing side by side with institutions which otherwise embody absolute personal, political, and religious freedom. Slaves he would have for all sordid services; and the institution of slavery was made supplementary to the criminal system, for the most part of the slaves were men who had been convicted of crime; and slavery for life was made a substitute for capital punishment. Besides the points mentioned, More's proposals comprise universal compulsory education, a reduction of the hours of labor to six hours per day, the employment of all adults, the most modern principles of sanitary reform, a complete revision of criminal legislation, and absolute religious toleration.

The point of education has been a strong one with theoretical and also with practical communists; as the labors of Owen in that direction clearly show. It is to be observed

that communists have seldom relied on their peculiar system alone for the regeneration of society. Community of goods has indeed been their central idea; but they have almost invariably supported it by other projects of less questionable utility. Compulsory education, free trade, and law reform, the various movements connected with the improvement of the condition of women, have found their earliest advocates among theoretical and practical communists. They denounce the evils of the present state of society; the hopeless poverty of the poor, side by side with the self-regarding luxury of the rich, seems to them to cry aloud to heaven for the creation of a new organization. They proclaim the necessity of sweeping away the institution of private property, and insist that this great revolution, accompanied by universal education, free trade, a perfect administration of justice, and a due limitation of the numbers of the community, would put an end to half the self-made distresses of humanity. Has it never occurred to them that a similarly happy result might be attained if all these subsidiary reforms were carried out, leaving the principles of private property and competition to their old performance in the economic world? If the principles of C. and of private property are to be fairly compared, the comparison must not be between C. as it might be and private property as it is. C. to be successful requires to be accompanied by important reforms, towards which existing society, founded on private property, is gradually finding its way. The power which society, as at present constituted, has shown of adapting itself to altered circumstances, and of assimilating by slow degrees the more valuable concomitants of the most revolutionary theories, is strong proof that it does not deserve to be dealt with in the summary manner advocated by the communists.

Thirty year ago Louis Blanc was the foremost advocate of C., and he took strong grounds against the education of the poor. In his work on the *Organization of Labor*, published in 1839, he says that in the existing order of society the spread of education among the masses would be dangerous—would, in fact, be impossible. This, if true, would be the strongest possible indictment against the existing order of society. But how have events falsified the assumptions made in the following passage—"We have seen why in the present system the education of the children of the people was impossible. Many thinking persons consider that it would be dangerous to impart instruction to the lower classes; and this is true. But do they perceive that this danger of education is an overwhelming proof of the absurdity of our social arrangements? Everything is wrong in the social order. Work is not held in esteem. The most useful trades are looked down upon. The workman is, to say the least, an object of compassion, while there are not found crowns enough for a ballet dancer. That is—yes, that is why it is dangerous to educate the people." Hence he concludes, a social revolution ought to be attempted; a new system of society ought to be introduced; the old system of society is, he says, so full of iniquities that it cannot co-exist with a diffusion of education among the people. Even at the time when these words were written there was much to show that they were not true. Since they were written the spread of education has been most general in those countries in which the old social order, founded on private property and competition, is unshaken. Germany, Scotland, and America have educated the people, and they are distinguished among other countries for possessing a peaceful, law-abiding, and order-loving population. So far from education being a danger to the institution of private property, nearly every one has been convinced by events that property is much more seriously threatened by ignorance and by the helpless desperation which ignorance brings; and the old order of society has recognized the necessity of protecting itself by the diffusion of education.

Passing over the war upon banks and banking made by Louis Blanc and his followers, and the equally bitter opposition by the German communists to the wonderfully successfully credit banks of that country, which were devised for the express benefit of the laboring classes, we come to the question of excessive population, which is almost always one great cause of famines and deep depression among the poor. The greater part of communist writers passionately deny this, and denounce with much vigor the idea promulgated by Malthus that population tends to increase faster than subsistence is capable of being increased. No one, however, has attempted to throw a doubt upon the main fact on which the Malthusian doctrine rests, that everywhere, except in very new countries with a large extent of unoccupied fertile land, checks on population are in active operation. Such checks must exist everywhere where population does not increase at its greatest possible speed. Under favorable conditions population has sometimes doubled itself in 20 years. In the 38 years between 1767 and 1805 the population of Ireland doubled. At the rate of increase shown by the last census the population of England would double in 63 years, and that of France in 265 years. In the United States for the ten years before 1860 the increase was very nearly 4 per cent. per year, which would double the population once in 25 years. The civil war in the decade after 1860 renders a comparison for that period worthless. In France and England, therefore, checks on population are, in a varying degree, in active operation; and the same may be said of all old countries. These checks may be divided into two classes, the first carrying with it nothing but misery and degradation, the second implying a high degree of self restraint, independence, and foresight. In the first class may be placed war, pestilence, famine, and all the diseases incident to insufficient food and overcrowding. In the second class

may be placed prudential restraint on marriage and the number of births to each marriage, and emigration. Every circumstance which weakens the efficiency of the checks on population comprised in the second class necessarily adds to the force of the checks which we have placed in the first class. In other words, any circumstance which relaxes the force of the prudential checks on population tends to produce the misery of famine, scarcity, and starvation diseases. What would be the effect of communism on the population? Would it strengthen or weaken the motives which promote a prudential limitation of numbers? Nearly all communists, whether theoretical or practical, have faced in one way or another the population question. But the theoretical communists of our times have hardly found words strong enough to express their detestation of the principle that any limitation is desirable to the possible number of births. The writings of Malthus are spoken of as "an outrage on household life." Louis Blanc says it is blaspheming God to say that the prosperity of the poor would be promoted by a limitation of the population. Why are you not logical? he cries; if you were you would recommend that the children of the poor should be put to death. And in another place he speaks of "this political economy without bowels, of which Ricardo has so complacently fixed the premises, and from which Malthus has drawn in cold blood the most horrible conclusions. This political economy contained in itself a vice that was to make it fatal for England and for the world." But practical communists have met the question of population in a different spirit. Several of the most successful realizations of communistic life have maintained the strictest celibacy among their numbers. The Essenes, who practiced community of goods before the Christian era, were a sect composed entirely of men who lived in seclusion from the world, and were in many important respects the prototypes of Christian hermits or monks. Two of the most important communistic societies in the United States have also made celibacy an essential feature of their system. The Economists and the Shakers, dating back respectively to 1805 and 1792, are strictly celibate, their numbers being recruited from the outside world and to a slight extent by the adoption of pauper children and orphans. Among the Moravians marriage is not permitted to take place without the consent of the heads of the society, who furnish the newly-married with a suitable marriage portion. The Separatists, another American community of German origin, established in 1817, favor celibacy although they do not enforce it. No marriage can take place without the consent of the trustees of the society; and they further discourage marriage by entering among the articles of their religion a declaration of their belief that celibacy is more in accordance with the divine will than marriage. The Amana, another American community of German origin dating from the last century, discourages marriage among its members, and no man is permitted to marry under 24 years of age. Even the Perfectionists, who have a most extraordinary system of complex marriage, take many precautions against a superabundant population. The number of births is controlled by the heads of the society. The practical answer made by the communists to the population question, even in so wealthy a country as the United States, in which unoccupied fertile land can be easily and cheaply obtained, is that a strict limitation of numbers is absolutely essential to their social and industrial well-being. As a matter of fact the population of nearly all the American communistic societies has not increased at all, but has greatly declined during the last 50 years. In 1823 the Shakers numbered 3,800; in 1874 they were only 2,415. The Icarians, the only American community which makes marriage compulsory, have declined in 25 years from 1500 to 65.

It should not, however, be concluded from these facts that the general adoption of C. would tend to strengthen the prudential checks on population. We have seen that modern communists, when freed from the trammels of actual experience of the daily working of the system which they advocate, have vigorously denounced the theory and practice of Malthusianism. The American communists have declined in numbers partly in consequence of the adoption into the communities of celibacy as a religious principle. It is also impossible to avoid the conclusion that their numbers have fallen off partly in consequence of the unattractive conditions of communistic life. The young members of these societies not unfrequently leave them when they arrive at manhood or womanhood. The routine and absence of spontaneity of a communistic life is a weight to young and active minds that is not counterbalanced by a security from want, or a mere bread-and-butter prosperity. The number of marriages and births have been controlled in others of these societies in virtue of the absolute despotism which is vested in the chiefs; individual liberty is entirely suspended; the smallest minutiae of the daily life of their members is regulated from headquarters. "A government which decides at what hour its subjects shall go to bed at night and rise in the morning, which prescribes the color, shape, and material of the dresses worn; the time of meals, the quality and quantity of food, and the daily task apportioned to each member; which enforces a rule that each of its subjects shall leave every morning a notice stating at what exact spot he or she will be found during each hour of the day; a government which can do all these things will find no great difficulty in controlling the number of marriages and births. The fundamental principle of communal life is the subordination of the individual's will to the general interest, or the general will. Practically this takes the shape of unquestioning obedience by the members towards the elders or chiefs of their society." If, however, C. were adopted throughout a whole

nation, the minute despotism which now distinguishes the government of existing communistic societies, and which furnish them with an effectual control over the growth of population, would cease to be possible; or if, indeed, it should ever become possible it would be through the careful supervision of individual liberty, and through the strenuous encouragement of everything which tended to destroy self reliance on the part of the people, and to build up the absolute power of the state. A people who purchased material prosperity at the price of their liberty would strike a bad bargain, especially when it is remembered that the limitation of the number of marriages and births which is enforced by the central authorities in a communistic society can be effected by voluntary self-control in a society based on private property and competition. The difference, therefore, as far as the population question is concerned, between communistic and private property is whether the necessary restraint upon the possible number of births shall proceed from the direct intervention of the state, or whether it shall proceed from the combined motives of self-interest, self-control, and parental obligation on the part of the people themselves. It should be remembered that what communists profess to be able to do is to insure to every member of a communistic society an ample supply of the necessities and conveniences of life. If the population question is pressing when the almshouse and charitable contributions are the only refuge of those who cannot maintain themselves, would it not become much more pressing if a man could obtain freely, and without fulfilling any disagreeable conditions, food, house, and clothing for himself, and as many children as he chose to bring into existence? It is this consideration which has forced upon the government of communistic societies the control of the marriages and births of their members. Wherever the principles of C. are adopted in so very materially modified a form as they are in the English poor-law system, legislative control over population has been enforced. The regulation which separates husband and wife in the workhouse is a practical recognition of the principle that where the state guarantees a maintenance it must, in self-protection, exercise control over the members of those dependent on it for support. Self-help brings with it self-control; state help makes state control indispensable. In the present economic condition of society the solution of the population question is not to be found in placing in the hands of the state, as C. has done, absolute control over domestic life. The solution of the problem must be sought in education, in an improved standard of comfort, and a determination on the part of the people not to sink below it, and in a reform of the poor laws and in systems of indoor and outdoor relief.

There are some charges made against C. which may be brought with at least equal force against the economic and industrial arrangements which now prevail. One of these is that C. does not avail itself sufficiently of the motive of self-interest, in order to obtain from each laborer the best and most conscientious work of which he is capable. If, it is urged, the result of man's industry belongs not to himself solely, but to the whole community of which he is a member, he will not throw the same energy and zeal into his work as he will if everything he produces belongs solely to himself. There can be no doubt of the truth of this statement; self-interest is a force on which industrial machinery chiefly relies for motive power. But it is remarkable that the prevailing system of working for fixed weekly wages checks the play of self-interest in the workman much more completely than it is checked in the communistic society by the fact that the results of the labor of each are shared by all. A workman who is in the receipt of fixed weekly wages has no motive to reach any higher standard of excellence or expedition in his work than such as will prevent him from being discharged for bad work or laziness. It is a complaint constantly heard among employers of labor that the only ambition of the men seems to be the doing the least work possible for their wages. The actual existence of the feeling among workmen is proved by many of the rules of trades' unions—such as that which limits the number of bricks which a hod-man is allowed to carry, and which in one case forbade the use of wheel-barrows in taking bricks from one spot to another. Thornton's book *On Labor* gives several examples of the rules adopted by trades' unions to check the tendency which is sometimes found in a workman to exert himself to do his best, and thus show his superiority over his fellows. "Not besting one's mates" has by several English unions been made a social enactment. Such examples are sufficient to show that the present industrial system does not bring into play the motive force of direct self-interest in stimulating the exertions of the laborer. In this respect C. would seem at first sight to compare favorably with mere wages-receiving industry; for in a communistic society every man and woman has some direct share, however small, in the result of his or her labor. If more is produced, there will be more to receive; and instead of a trade union, every member of which is pledged, under penalties, to work slowly and to watch that his fellow-workmen do the same, C. gives to each laborer a direct interest not only in working well himself, but in watching to see that honest and steady work is done by his neighbor. As a matter of fact, the American communistic societies have found no difficulty in enforcing the habit of careful and regular industry on their members. The American communists do not as a rule work hard, for they find that they provide for all the wants of the community without excessive or exhausting toil; but there are no idle members; every one works well and steadily while he is working. That the quality of their work is good is proved by the fact that their commercial reputation stands very high. The

garden seeds of the Shakers, and their brooms, have been celebrated all over the United States for their excellence. "The Oneida perfectionists established the reputation of their silk twist in the market by giving accurate weight and sound material; the woolen stuffs of Amana command a constant market, because they are well and honestly made; and in general they (the communists) have a reputation for honesty and fair dealing among their neighbors wherever their products are bought and sold." It should, however, be remembered that a few successful communists afford no test of what would be the effect of a general adoption of C. on industrial activity and efficiency. In the United States there are only about 5,000 communists, children included; and though there are eight different societies, these are divided into 72 separate communities, the Shakers alone having 58. On an average, each community consists of less than 70 persons. The elaborate despotism of communistic government, together with the minute surveillance which the small size of these communities renders possible, makes it easy for the leaders to exact from each member his quota of toil; idleness would be at once detected, and would not be suffered to exist, as the power of expelling an idle member would be resorted to if the voice of public opinion were not sufficient to induce him to mend his ways. Similar means of detecting and preventing idleness would be completely absent if C. were generally adopted. There would, of course, in this case be no power of expelling an idle member, and the difficulty of detecting and proving to the central authorities a disposition on the part of any of the members to avoid a fair share of work would increase step by step with the increase of the size of the community. The motive of self-interest in promoting good work is much more powerful in a small communistic society than in a large one. A man can appreciate the value of his own industry much more clearly if the resulting product is shared between 30 or 40 persons, every one of whom is known to him, than he can if it were thrown into the common stock of 20,000 people. The weakening of the motive of self-interest which is inherent in C. is reduced to a minimum in small communities; but it would act with fatal results to industrial activity if there should ever be an attempt to make C. universal. For much as the present system falls short of making the most of the great engine of self-interest among those who merely work for wages, there is no such feature among the other industrial classes. Capitalists, land owners, inventors, traders, members of partnerships, members of co-operative societies, all are brought under the stimulating influence of self-interest, and thus devote themselves to industrial projects with a zeal completely and necessarily unknown among those who work for wages, or those who are members of communistic societies. It is a special feature of co-operation that it brings the motive of self-interest into activity among manual laborers without attempting, as C. does, to overthrow all existing economic institutions. It takes these as they are, and men and women as they are, and suggests a means by which the laborer, no less than the capitalist, can be stimulated by direct self-interest to throw some energy and enthusiasm into his work.

While it has built up co-operation, C. as a system has been a signal failure. In France, the names of St. Simon, Fourier, Bazard, and Enfantin are synonymous with disaster. In England the name of Owen recalls the brief existences of Harmony hall and Orbiston, the establishment of the labor exchange and the issue of labor notes, and a number of other schemes which raised great hopes and expectations that were doomed to speedy disappointment. In the United States the success of C., such as it is, is hardly more encouraging than its failure in Europe. The measure of material prosperity achieved is not very considerable, bearing in mind the length of time most of the societies have existed and the ease and cheapness with which unoccupied land can be obtained. Nordhoff estimates the capitalized wealth of the 72 American communities at \$12,000,000. They own from 150,000 to 180,000 acres, or about 36 acres to each person; they possess some of the most fertile soil in the world; one of the Shaker villages owns a magnificent estate of 4,500 acres lying in the famous Miami valley, a soil much of which is so fertile that after 60 years of cropping it will still yield from 60 to 70 bushels of corn to the acre without manuring. The material condition of the inhabitants of the communistic villages compares favorably, no doubt, with that of the German peasant by whom the majority of American communes were originally started; but the monotony, the personal submission, the impossibility of privacy or temporary seclusion, the absence of anything like intellectual activity in these societies, would render the life well-nigh unbearable to people who had been previously accustomed to a higher standard of happiness than that at present within the reach of the ordinary day laborer. Many communistic experiments in the United States have been unsuccessful. Noyes, in his book on *American Socialism*, gives brief histories of no less than 47 of these failures. Comparing the histories of those societies which have died a natural death with that of those which have continued to exist, it is found that the successful societies had no advantage either in the wealth of their members or the intellectual ability of their leaders. Most of the successful societies began poor; most of the unsuccessful societies began with what were believed to be sufficient means to achieve success. Many of the unsuccessful societies were founded by high-minded, highly cultivated men and women, and their members were distinguished for education and intellectual attainments. From these facts, and with ample means through personal experience for forming a correct opinion, Mr. Nordhoff draws the conclusion that in a communistic experiment success depends upon a feeling among all the members "of the unbearable-

ness of the circumstances" in which their lives were originally cast. They must have suffered from wrong and oppression, as well as from want, before C. can appear as a welcome change in their manner of life. Hence the poorer and more narrow and miserable the condition of the people who start a communistic experiment the more likely it is under judicious leaders to succeed. People are easily satisfied when almost any change in their lives must be for the better. It would be undesirable to detract from the achievement of the American communes in raising the poorest and most miserable to a degree of material prosperity which compares with that of well-to-do small farmers in any country. This is no small feat; as they have also proved the possibility of putting C. into practical forms at least on a small scale, and under exceptionally favorable economic conditions. But it is impossible to doubt that their practical value to the world has been in illustrating the limitations and drawbacks of the system. As long as C. remained an unexplored region given over to the dreamers of dreams and the seers of visions, it was impossible to prove that it did not possess all the marvelous perfections which they fondly attributed to it. The American societies offer a life which is confessedly attractive only to those whose original circumstances are exceptionally unfortunate. To those, C. can give, together with a congenial religious atmosphere, material prosperity of a humble type, accompanied by the sacrifice of individuality, liberty, privacy, and intellectual development. It can hardly be denied that these experiments prove that, even were C. on a large scale practically possible, it would never satisfy the aspirations of those who look for a time when increased material prosperity among the working classes shall be accompanied by a corresponding increase of intellectual activity, political responsibility, and personal independence. The old form of society seems more favorable than C. to the growth of these qualities; and it is probable that the experiments in the United States may help to establish the conviction among economic revolutionists that more can be accomplished by grafting new institutions, such as co-operation, on the old plan of private property than can be achieved by rooting it up altogether and planting the seedling of C. in its stead. [Portions of this article are taken, with some modifications, from *Encyclopædia Britannica*, ninth edition.]

CO'MO, a province of Lombardy, Italy, on the border of Switzerland; 1049 sq.m.; pop. '71, 477,642. It is a mountainous region, with many small lakes and several rivers, the Adda and Ticino being the most important streams. The products are corn, wine, fruit, silk, etc.; and there are mines of copper, lead, and iron, and quarries of white marble. There are also manufactories of cloth, silk, and woollen goods, paper, fire-arms, etc. The people are generally industrious and in good condition. This province was ceded to Italy by Austria in 1859.

COMONFORT, YGNACIO, 1812-63; a statesman and president of Mexico. He was a member of congress in 1842, and a senator six years later. In 1854, he assisted Alvarez against Santa Anna, and on the resignation of Alvarez he became provisional president. He was proclaimed president in 1857, and in 1858 he was driven into exile. In 1863, he commanded an army to oppose the French invaders who intended to establish Maximilian in power. Near the close of the year, he was assassinated by banditti.

COMORN, a co. in Hungary on the Danube; 1145 sq.m.; pop. '70, 143,690, nearly all of whom are Magyars. The n. portion is fertile; the s. mountainous. A very excellent wine is produced. Dotis is one of the principal towns.

COMPANY (*ante*). In the U. S. army, all branches of the service are divided into companies. Infantry companies in time of war are expected to number about 100 men. A battalion of infantry has 10 companies, and each company has a capt. and two lieuts. In the cavalry, a company is sometimes called a troop, and in the artillery a battery.

COMPARATIVE ANATOMY, is the term employed to express that branch of anatomy in which the construction, form, and structure of two or more animals are compared with each other, so as to bring out their features of similarity or dissimilarity. It is sometimes used, in contrast with the term human anatomy, to signify the anatomy of the lower animals, but this is an inexact use of the term, as the anatomy of man may be made comparative when it is examined in comparison with that of animals. The study of comparative anatomy is of especial importance to the physiologist, the embryologist, the veterinarian, and the zoologist. To the physiologist because, from the comparison of the bodies of different animals with each other, modifications in the size, form, and structure of any particular organ can be traced, and conclusions can be drawn on the importance of the functions of the organ in the economy. Moreover, with a knowledge of comparative anatomy, the physiologist can conduct experiments on animals which have organs similar in structure to those of man, and determine their functions more precisely than would be possible in the human body. To the veterinarian a knowledge of the comparative anatomy of the domestic animals is essential to the study of their diseases. To the embryologist, a knowledge of the anatomy of different animals throws light on the signification of the structural changes which the body of any particular animal passes through in the course of its development. To the zoologist, a knowledge not only of the external form but of the internal structure of animals is essential in order that he may frame a precise system of classification. In the

present work the anatomy of the different classes and of some of the more important orders of the animal kingdom is arranged under special heads.

COMPASS PLANT, called also "resin weed" because it abounds in resinous matter; a large plant growing on the prairies, whose leaves are said always to point directly or nearly n. and s. When cultivated in gardens this property does not always appear.

COMPASS, SOLAR, an instrument for determining at any place an accurate n. and s. line. It has a range of about 35° , and may be adjusted to the latitude of any place in the United States. It has a latitude arc, a declination arc, and an hour arc, each to be duly adjusted for an observation; and has been found of much service in running important boundary lines, and other government surveys. One of its recommendations is its avoidance of the perplexities caused by local attraction. It is the invention of William A. Burt, of Michigan.

COMPITALIA, or LUDI COMPITALITII, a festival in Rome in honor of lares compitales, the divinities presiding over places where two or more roads meet. Macrobius says that Tarquinius Superbus restored the festival which had been neglected, and sacrificed boys as a part of the services. Human sacrifices, if ever really made, did not survive the Tarquins, for, after their expulsion, garlic and poppies were offered.

COMPLEXION, the color of the skin, existing in the epidermis and dependent upon certain pigment cells. Those nations most exposed to the weather and least under the influence of civilization are usually of the darkest color. The savages of Australia are black; while the half-civilized people of New Zealand are much lighter, the people of the Friendly islands are often olive colored, while those of Tahiti, who have attained a good degree of civilization, are of a light complexion, and have long flowing hair. The same conditions are found in civilized countries where degrees of rank are observed; the nobility are easily distinguished by their fair and the peasant by their dark features. Blumenbach divides mankind into five classes, according to color: 1. Caucasian, or white, having for the most part a white skin and red cheeks, and hair soft, long, and wavy, sometimes black, but oftener brown, and frequently yellowish. 2. Mongolian, or olive, having a skin of an olive color, and hair black and stiff, straight, and spare in quantity. 3. Ethiopians, or negro, with black skin, and black kinky hair. 4. American, or red, with copper-colored skin, and black, stiff, and straight hair. 5. Malay, with tawny skin, and black, curly hair. Light hair is the usual accompaniment of white and thin skin; while dark hair and dark complexions commonly go together. There does not appear to be any anatomical difference in the skins of the white and the colored races; the changes are the result of temperature, climate, and exposure.

COMPLUTENSIAN POLYGLOT, the edition of the Scriptures issued under the patronage of cardinal Ximenes at a very great cost to himself. It was in six volumes, printed at Alcala in Spain, between 1502 and 1517. The first four volumes contain the Old Testament, with the Hebrew, Latin, and Greek in three columns, the Targum, and a Latin version of the same. The fifth volume contains the Greek New Testament and the Latin vulgate; and the last volume has the vocabularies and indexes. Only 600 copies were printed. And yet, while this great and learned cardinal was expending a large fortune in producing this most valuable polyglot of the Scriptures, he made a wanton and wicked destruction of a vast amount of most valuable literature. This was in consequence of his fiery zeal for the extirpation of heresy. To effect such extirpation and to preclude the possibility of converts returning to their former errors, he caused all procurable Arabic manuscripts to be piled together and burned, in one of the great squares of the city, so as to exterminate the very characters in which the teachings of the infidels were recorded. But from thousands of manuscripts destined to the fire he did reserve about three hundred, all of which related to medical science. His conduct was in strict keeping with that of the Roman Catholic conquerors of Mexico, who destroyed every Aztec manuscript, and as far as possible defaced every inscription that fell under their notice. The modern scholar, groping in the dark for information concerning ancient religions and primitive nations, may well paraphrase Mme. Roland's bitter aphorism: "O religion! what crimes are committed in thy name!"

COMPOUND FRACTURE, is such a breaking or contusion, that the air may pass through lacerated flesh and skin to the bone. Such fractures are very difficult to treat with success.

COMPOUNDING or FELONY (*ante*), in the United States, is treated much the same as in England. It is punishable by fine and imprisonment. The accepting of a promissory note signed by a party guilty of larceny, as a consideration for not prosecuting, is enough to constitute the offense; but the mere retaking of stolen goods by the owner is not an offense, unless the thief is not to be prosecuted. A receipt in full of all demands, given in consideration of stopping a criminal prosecution, is void.

COMPROMISE MEASURES, or OMNIBUS BILL, the popular name of a series of measures submitted to the U. S. senate in Jan., 1850, by Henry Clay, having for their object "an amicable arrangement of all questions in controversy between the free and the slave states growing out of the subject of slavery." These questions, which had perplexed the national government from the beginning, and which, since 1830, had

caused a wide agitation among the people, were complicated by the war with Mexico, which led to the acquisition of much new territory, the status of which in respect to slavery remained to be determined. At the north it was insisted that the territory in question was *ipso facto* exempt from slavery, and that it was the right and duty of congress to protect it from the blight of an institution whose nature was at war with republican government. The slaves states, on the other hand, were ambitious to establish slavery on at least a part of this territory, and insisted that the national government had no power under the constitution to set up any legislative barriers against the system. The controversy was thought by many to menace the safety of the union, and Henry Clay, on whom had been bestowed the *soubriquet* of "the compromiser" for his previous efforts to stop the agitation of the slavery question, proposed in the senate a series of measures for the purpose of making "a final settlement" of all the questions arising from this subject and bringing the people of the two sections of the country into perfect harmony. When congress met in Dec., 1849, the country was profoundly agitated. President Taylor at an early day transmitted a special message, recommending in substance that California, a part of the newly acquired territory, should be promptly admitted with the anti-slavery constitution which her people had framed and the boundaries which they had designated, and that the other territories should be left under the military government which had been established upon their conquest until such time as they should be entitled to and desirous of admission into the union as states, when they should be received with whatever republican institutions they might present. This plan made no provision for the settlement of the boundary of Texas, which state claimed to include within its rightful jurisdiction most of the people of New Mexico with their entire territory e. of the Rio Grande. To this assumption the people of New Mexico manifested the most determined and active hostility. Mr. Clay at an early day made a speech in the senate concurring in gen. Taylor's preference that each subject should be considered and decided by itself, but insisting that the territory should be promptly organized under regular territorial government, and the Texas boundary settled. In the progress of the discussion Mr. Clay waived his own preference of separate action upon the several questions, and assented to the combination of the admission of California, the organization of the territories, and the adjustment of the Texas boundary, all in one bill, which thence obtained the nickname of the "omnibus bill." A grand committee of 13 was raised, with Mr. Clay at its head, from which committee the "omnibus" was fully reported. It was contested by a good share of the strength and much of the weakness of the senate. When the struggle was at the fiercest, gen. Taylor died, and it was supposed that his decease and the succession of vice-president Fillmore, who was esteemed moderately favorable to the omnibus bill, would secure its passage; but that expectation was not realized. On the contrary, after various amendments had been proposed, and most of them rejected, though some of considerable importance were adopted, a motion to strike out all that part relating to the boundary of Texas was carried, and the bill thus crippled was dismembered limb by limb, until nothing remained but the section organizing Utah as a separate territory. The famous omnibus bill, reduced to this one item, was passed and sent to the house. However, the California admission, the New Mexican territorial and Texas boundary section, and a new statute for the rendition of fugitive slaves, all passed as separate measures. Their effect, however, was not to suppress but rather to intensify the anti-slavery agitation, which waxed hotter and hotter, until it was finally suppressed only by the destruction of slavery itself.

COMPTON, a co. in the province of Quebec, Canada, on the New England border, drained by the St. Francis, Chaudiere, and Salmon rivers; pop. '71, 13,665. The Atlantic and St. Lawrence railroad crosses the s.w. section. Capital, Cooksville.

COMPTON, HENRY, 1632-1713; bishop of Oxford and afterwards of London. He was the tutor of James II., who, through his teachings, became attached to the Protestant faith. James deposed Compton, but when invasion was threatened he reinstated him; but Compton adhered to the Protestant side, and when William was proclaimed, crowned him with his own hands.

COMSTOCK, CYRUS B., b. Mass., 1831; a graduate of West Point, major of engineers, largely employed in engineering works during the war of the rebellion. In 1871, he was made superintendent of the geodetic survey of the northern lakes.

COMSTOCK, JOHN LEE, 1789-1858; b. Conn.; a physician in Hartford. He is widely known as the author of text-books for schools, the one on philosophy having had a sale of more than a million copies.

COMUS, in the later mythology of the Greeks, the god of mirth. In classic mythology, the personification does not exist; but in the works of Philostratus, a writer of the 3d c. A.D., C. appears as a winged youth slumbering in a standing attitude, his legs crossed, his countenance flushed with wine, his head (which is sunk upon his breast) crowned with dewy flowers, his left hand feebly grasping a hunting spear, his right an inverted torch. Born from the loves of Bacchus and Circe, C. is "much like his father, but his mother more;" a sorcerer, like her, who gives to travelers a magic draught that changes the human face into the "brutal form of some wild

beast," and, hiding from them their own foul disfigurement, makes them forget all the purities of life "to roll with pleasure in a sensual sty."

CO'NANT, HANNAH CHAPLIN, 1809-65; daughter of Jeremiah Chaplin, president of Waterville college, and wife of Thomas Jefferson Conant, D.D. In 1838, she was the editor of *The Mother's Journal*, and before and afterwards a contributor to current literature. She was thoroughly versed in the German language, and assisted her husband in translations and other literary work. Her principal work is *The English Bible, a History of the Translation of the Holy Scriptures into the English Tongue*. She wrote, also, *The Earnest Man*, an excellent biography of the missionary Judson.

CO'NANT, THOMAS JEFFERSON, D.D.; b. Vt., 1802; a graduate of Middlebury college in 1823, studied philology in New York, and was professor of languages in Waterville college (now Colby university). He resigned in 1833, to devote his time to the study of eastern languages, and in 1835 he was appointed professor of Biblical literature and criticism in the Baptist theological seminary at Hamilton, N. Y. This position he held for 15 years, two of which were passed in Europe. He translated Gesenius's Hebrew grammar, with the additions of Roediger, a work which became a standard text-book in the United States and England. After holding the professorship of Biblical literature in the university of Rochester for several years, he settled in Brooklyn in 1857, where he now resides, devoting himself for a long time to Bible revision for the American Bible Union. His work has been chiefly with the books of Job, Matthew, Genesis, Psalms, and Proverbs. He also published (in 1860) a treatise on the term *Baptism*, in the New Testament, which attracted much attention. He has been for a number of years one of the American contingents of the Canterbury (England) committee on the complete revision of the authorized version of the Bible.

CONCEITS, from the Italian *concetti*, and meaning ingenious thoughts or curious and pleasant terms of expression in literary composition. These quaint and often absurd conceits greatly marred the literary work of many writers in the 16th and 17th centuries in Italy and France, and they made some progress in England, as may be seen in Cowley's and Donne's verses.

CONCEPTUALISM, the name given to a philosophical theory which is, in some sense, intermediate between "realism" and "nominalism." Realists assert that the general notions of the mind are the substance of things; that "ideas" answer not only to the reality of objects, but contain their soul and life. Nominalists maintain that general notions are mere abstractions, inventions of the brain, not expressing the real substance of things. Conceptualists, striving to find a position between the two, teach that the mind has the power of forming for itself general conceptions of single objects. Aristotle taught that, although we cannot prove the correspondence of general conceptions with the reality, we are always compelled to take them for indispensable forms of thinking, if we will think at all. Consequently, some have been unable to satisfy themselves whether they were realists, nominalists, or conceptualists.

CONCH, the name of many univalve shells, which are sometimes used as dinner horns, having almost the sonorous quality of a trumpet. In some of the Pacific islands the shell is used as a musical instrument. The heaps found in various places on the Atlantic coast of the United States indicate that the Indians used for food the tough clam-like creature inclosed in the shell.

CON'CHA, JOSÉ DE LA, b. 1800; a Spanish statesman, a native of Buenos Ayres. In South America he fought against the revolutionists, and against Don Carlos in Spain, where he found rapid promotion. In 1849, he was made captain-general of Cuba, where he brought about many reforms. He was removed in 1851, again appointed in 1854, and again recalled in 1856. He was senator, ambassador to France, and a member of the cabinet. In 1868, Isabella made him prime-minister, and when her cause was lost he followed her into exile.

CON'CHA, MANUEL DE LA, Marquis of Douro, b. 1794; brother of José. He served against Napoleon, against the North American revolutionists, and against Don Carlos; and supported Maria Christina, Isabella, and the administrations of Espartero and Narvaez. He escorted Maria Christina to Paris, and was afterwards one of the prominent ultra-conservatives in the Spanish legislature. He suffered banishment and endured promotion with subsequent changes of government. His work on infantry and cavalry tactics is a text-book in Spain.

CON'CHO, a co. in w. Texas, on the Colorado, intersected by the Concha river and other streams; 1025 sq. m.; no population. It has a broken and rocky surface, with little timber.

CON'CHOS, or CONCHAS, a river in Mexico in the state of Chihuahua, flowing through the rich table land of that region and joining the Rio Grande del Norte, after a course of about 350 miles.

CONCLAMATIO, a custom among the ancient Romans something like the "wake" among modern Irish. When Dido burned herself to death, her palace was vocal with the howls of her attendants. Their ululations apparently resembled the wild lament of the Irish over their dead.

CONCOMITANCE, SACRAMENTAL, in the Roman Catholic church, implies that the body and blood of Christ, sacramentally, accompany each other, so that under either form, whether wine or bread, both are sacramentally received.

CONCORD, a t. in Middlesex co., Mass., on the Concord river and the Fitchburg railroad, 20 m. n.w. of Boston; pop. '70, 2,412. It is a very handsome village, in a lovely rural region, having a variety of manufactories. It was in Concord that the provincial congress met in 1774-75, and here, April 19, 1775, a number of men were killed in a skirmish between the people and the English troops. Ralph Waldo Emerson, A. Bronson Alcott, Hawthorne, Thoreau, and other men of literary fame, have been residents of the town, which has gained a repute in America and Europe as one of the centers of philosophic thought.

CONCORD (*ante*), a city in Merrimac co., N. H., the co. seat, and capital of the state, on Merrimac river, 60 m. n.n.w. of Boston. The river divides the city almost equally from n. to s., and along a part of the n. border winds the Contocook river. At the junction of the two streams there is an island historically famous as the place where, in 1697, Mrs. Hannah Dustin, aided by a boy and her nurse, slew ten Indians who had made the women and boy captives at Haverhill, Mass. The site of C. was the seat of the Pennacooks, formerly a powerful Indian tribe. The city, settled 1725, incorporated 1853, is well laid out, and the streets are finely shaded with maples and elms. Four or five railroads center here, connecting with all points in New England and Canada. In 1810, the pop. was 2,398; in 1870, it was 12,241. One of the principal buildings is the state-house, built of granite by the labor of state-prison convicts. It is in a fine park near the center of the city. Half a mile away stands the state asylum for the insane, a large brick building, with which is connected a fine farm. The city is supplied with water from works built in 1872. Not far away are extensive quarries of fine-grained white granite, of which large quantities are sent to other cities. There is an abundance of water-power furnished by the rivers and small streams near the city. The manufacture of carriages is one of the leading industries. There are nearly 150 manufactories in this and other branches of business. The libraries and schools of the city are ample and of the most advanced order. There are about 20 churches, and seven or eight newspapers.

CONCORD, BOOK OF, a collection of confessions of faith published in 1580, generally accepted by the Lutheran church. Its contents are: 1. The Apostles', the Nicene, and the Athanasian Creeds; 2. The Augsburg Confession; 3. The Apology of the Confession; 4. The Schmalcald Articles; 5. The Larger and Smaller Catechisms of Luther; 6. The Formula of Concord. The last named division, the **FORMULA OF CONCORD**, appeared in 1580, after protracted conferences, and was acceded to by 86 of the states of the empire. Its topics are: The Rule of Faith and the Creed; Original Sin; Free Will; Justification; Good Works; The Law and the Gospel; The Third Use of the Law; The Lord's Supper; The Person of Christ; The Descent of Christ into Hell; The Customs of the Church; Predestination, and Election; and an appendix concerning heresies and sectaries.

CONCORDIA, a parish in e. Louisiana, on the Mississippi and Red rivers; 790 sq. m.; pop. '70, 9,977—9,257 colored. The surface is low, and much of the land is subject to inundation. Cotton is the chief production. Seat of justice, Vidalia.

CONCORDIA, a Roman divinity, the goddess of concord, in whose honor many temples were built, the oldest of them by Camillus in 367 B.C. In this temple the senate sometimes met. It was restored by Livia, wife of Augustus, and consecrated to Tiberius in 9 A.D. It was burned in Constantine's time, but was again restored. The goddess was represented as a matron, holding in her right hand a saucer-like vessel or an olive branch, and in her left, the horn of plenty. Her symbols were two hands clasped together, and two serpents entwined about a wand.

CONDAMINE, CHARLES MARIE DE LA. See **LA CONDAMINE**.

CONDÉ, HENRI I. DE BOURBON, Prince de, 1552-88; son of Louis. He joined the Huguenots after the death of his father, and escaped death at the massacre of St. Bartholomew only on a promise to renounce Protestantism. Some time afterwards he collected a military force and joined Alençon, the Protestant leader. In 1585, he was excommunicated by the pope. He died from poison, and his wife was suspected of being guilty of his death; but Henry IV. refused to prosecute her, and that led to the suspicion that she had a *liaison* with that monarch.

CONDÉ, LOUIS HENRI JOSEPH DE BOURBON, Prince de, son of Louis Joseph, and last prince of Condé, 1756-1830. When he was quite young he fought a duel with the count d'Artois (afterward Charles X.). At the siege of Gibraltar in 1782, he was wounded. In the revolution of 1793, he early came forward and served in the Condé army. He was not married, and his mistress prevailed upon him to settle his fortune on the son of Louis Philippe, the duc d'Aumale. At the revolution of 1830, he proposed to change this will, but before doing so he was found strangled. It was judicially decided that he had committed suicide.

CONDÉ, LOUIS JOSEPH DE BOURBON, Prince de, 1736-1818. His father left him an orphan when he was but three years old. He was bred to arms, and won distinction in

the seven years' war. In the revolution of 1793, he fled to the Rhine frontier, and with an army of fugitives co-operated with the Austrians. In 1797, he went to Russia, and served two years later in the campaign in Switzerland, and still later he was in the Austrian service. After the restoration, Louis XVIII. made him grand-master of the royal household. He wrote an essay on the life of the first Condé, and a history of the family.

CONDER, JOSIAH, 1789-1835; an English author, editor of the *Eclectic Review* and *The Patriot*. He published also many works on religious, political, and miscellaneous subjects. The most popular of these was his *Modern Traveler*, a series of 30 volumes descriptive of the various countries of the globe.

CONDICT, JOHN, 1755-1834; b. N. J.; a soldier and surgeon in the revolutionary army. He was several times chosen to the state legislature, was a representative in congress for three terms, and U. S. senator from 1803 to 1817.

CONE, SPENCER HOUGHTON, D.D., 1785-1855; b. N. J.; studied at Princeton college. His mother became a widow when he was about 14 years of age, and he undertook teaching to support the family. He also became an actor, and played in Philadelphia and other cities with good success for seven years. He was engaged to be married, but the prospective bride required him first to abandon the stage, which he did, and took an editorial position on a Baltimore newspaper. During the war with England, he served in the army, and was present in the attack on Washington and Baltimore. He next turned his attention to the pulpit, and while holding a small government office, preached in some churches in Washington and the neighborhood. In 1815-16, he was chaplain to congress, and in 1823 was called to the Oliver street Baptist church, New York city. In 1841, he took charge of the Broome street church, where he remained during life. In 1832, he presided over the Baptist general conference for the United States. During his entire ministry he was conspicuous in all branches of church work. In 1850, he, with others, published a pamphlet recommending a new translation of the Bible. The idea did not find favor at the time, but the work was undertaken at a later period through the agency of the American Bible union, an organization of which Cone was the president.

CONECUH, a co. in s. Alabama, on the Escambia river, crossed by the Mobile and Montgomery railroad; pop. '70, 9,574-4,901 colored. The surface is hilly, and the soil sandy. Cotton is the most important crop. Co. seat, Sparta.

CONEJOS, a co. in s.w. Colorado, on the Utah and New Mexico borders, bounded e. by the Rio de Norte; 11,000 sq.m.; pop. '70, 2,504. There are several ranges of mountains in the co.; but also much good land, and gold and silver deposits. The w. section is taken up by the Ute Indian reservation. Besides Indians, the inhabitants are chiefly Mexicans or half-breeds. Co. seat, Conejos.

CONESTOGAS, or GANDASTOGUÉS, Indians once living in Pennsylvania, called by the people of Maryland "Susquehannas," and by the Dutch "Minquas." They were of the Iroquois family, and were once very powerful. Near the close of the 16th c., they nearly exterminated the Mohawks, and held several tribes in subjection. After almost continual war with their neighbors for a century, they were quite subdued in 1675. Their king made a treaty with William Penn in 1701. Another treaty was made with them in 1742, at which time but few of the tribe were left. During an excitement against red men in 1763, the few remaining members of the tribe took refuge in the jail at Lancaster, Pa., where they were murdered by a band of white ruffians. One of the foremost of their chiefs was Logan (in Indian, Tah-gah-jute), whose speech so famous for eloquence and pathos will be well remembered by people who were familiar with American school-books of the early part of the 19th century. The Swedish missionary Campanius made a vocabulary of the Conestogas language.

CONEWAN'GO CREEK, a small stream in Cattaraugus co., in w. New York, which forms part of a line of continuous water navigation from the gulf of Mexico through the Mississippi, the Ohio, and the Alleghany rivers, and this creek and Chautauqua lake, to a point only 10 m. from lake Erie.

CONEY ISLAND, in Kings co., N. Y., 9 m. s.e. of New York city. It was one of the first places of landing of the Dutch discoverers, and for 240 years was regarded as worthless except for pasturage. About 1840, steam-boats began Sunday and holiday excursions from the city to Coney Island, and cheap hotels and rude bathing-houses were put up. For the next 25 years the island was a favorite though not always reputable resort; but the extraordinary growth of New York, and especially of Brooklyn, turned attention to the island as a summer resort, and better accommodations were provided, order was enforced, and it became fit for the reception of respectable people. About 1875, a great impetus was given to its popularity by the construction of steam railroads and the erection of immense hotels of the best class, and last year (1879) the island was visited by more people during the summer season than any other place of resort in America. It is reached by 7 or 8 railroads, and by 7 regular lines of steamers. The island is nearly 5 m. long by $\frac{1}{2}$ to $\frac{3}{4}$ wide, and is nowhere more than 20 ft. above high water. It is separated from the mainland by a tidal stream in some places not more than 12 ft. wide. The pop. varies from 15,000, or more, in summer, to 100, or less, in winter.

CONFECTIONERY, preparations of sugar, or of material of which sugar is the principal ingredient. There are endless varieties of these preparations, from simple candies unadorned and shapeless, to the most elegant and costly works of art. One of the simplest forms is that of lozenges, or drops of plain or flavored sugar. In making these the sugar is ground to a fine powder, after which it is mixed with dissolved gum arabic so as to form a stiff dough; then rolled, or cut and pressed by machinery into the required forms. Another variety is known as comfits. To make these a core or center of some kind is required, and these cores consist usually of nuts or small fruits, varying from a caraway seed to a peach or a pear. Around such cores successive layers of sugar are deposited until the required size is reached; and to do this the cores are placed in large copper vessels which are geared so as to move back and forth in a small angle, whereby the cores are kept in constant motion, the mixture being steadily supplied with pure strained sirup of sugar. Much talent is expended in large cities in making and ornamenting confectionery for table show-pieces. Where confectionery is pure its use may involve little danger to health. Unfortunately it cannot be doubted that a large proportion of the cheaper kinds are adulterated, and colored with poisonous stuffs.

CONFEDERATE STATES OF AMERICA. See **REBELLION, WAR OF THE.**

CONFEDERATION, an alliance of nations, states, or princes; sometimes used for a single nation, as that of the Mexican republic, the official title of which is "The Mexican Confederation." The German confederation was formed immediately after the Vienna congress of 1815. In July, 1778, the united colonies (afterwards the United States of America) agreed to the "Articles of Confederation and perpetual Union between the states of New Hampshire, Massachusetts Bay, Rhode Island and Providence Plantations, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, and Georgia." In these articles are set forth the principles of government which were a few years later embodied in the constitution of the United States, with such additions as were necessary "in order to form a more perfect union." In South America is the Argentine confederation, and Switzerland is sometimes called the Swiss confederation. The confederation of the Rhine was formed in 1806 by a number of German states, under the protection of Napoleon.

CONFERENCE, a coming together to consult upon any cause or course. In legislation there are often committees of conference when the two houses of congress or of a state legislature disagree on any measure. In that case each house appoints a committee, and these committees either agree to a single course, or report to their several houses that no agreement can be made. The two houses may meet in joint session for certain specified purposes, but never in conference. Between the representatives of nations there have been many important political and commercial conferences, such as those of Vienna in 1820 and 1834, of Paris in 1856, of London in 1864, 1867, and 1871. Of late years, conferences have grown popular. There was an international conference (or congress) at Geneva in 1864, for the organization of the sanitary commission, and at Paris in 1867, on the money question. There have been many ecclesiastical conferences. One was held at Hampton Court palace, at the instance of James I., in Jan., 1604. It was composed of prelates of the church of England and dissenting ministers, the object being to effect a general union. This conference led to the translation of the Bible known to English readers as the authorized version. Another conference was held in 1661, when some alterations were made in the prayer book. Similar conferences were once frequent in the Roman Catholic church; and in other churches there are pastoral and other conferences. The annual meeting of the Wesleyan church of England is called the "Annual Conference;" and the same title is used for annual or other stated sessions in the Methodist Episcopal, the Quaker, the Evangelical, Baptist, and other denominations. Under the name of "Evangelical Church Conference," delegates from the German states and Austria meet for the consideration of questions affecting church matters. See **CONFERENCES OF THE METHODIST EPISCOPAL CHURCH.**

CONFERENCES OF THE METHODIST EPISCOPAL CHURCH are five in number: 1. The *Quarterly Conference*, limited to a single pastoral charge (or local church), and having supervision over it. Its members are the pastor, local preachers, exhorters, stewards, and class-leaders, together with the trustees and Sunday-school superintendent, if members of the church. 2. The *District Conference*, embracing the churches of a presiding elder's district, is composed of the pastors, local preachers, exhorters, and one steward and Sunday-school superintendent from each pastoral charge. It has a general supervision of the temporal and spiritual affairs of the district; licenses local preachers, has jurisdiction over them, and recommends them to the annual conference for admission on trial and for orders. 3. The *Annual Conference*, composed wholly of traveling preachers. Possessing no legislative power, its functions are purely administrative. It has the power of discipline over its own members, inquiring annually into the Christian character and ministerial efficiency of each by name. 4. The *Judicial Conference*, instituted for the trial of bishops who may be accused of wrong-doing, and of appeals by convicted members of an annual conference. The annual conferences severally elect seven "triers of appeals." In case of an appeal the triers from three adjacent conferences constitute the judicial conference to which it is referred. For the trial of an accused

bishop the triers from five neighboring conferences are necessary. 5. The *General Conference*, the highest judicatory and only legislative body of the church, meets once in four years. It is composed of one minister for every 45 members of each annual conference, and two laymen, chosen by lay electors, from the several quarterly conferences within the same territory. Under certain restrictive rules it has supreme authority, with supervision over all the interests and work of the denomination. It elects the bishops and other general officers. The bishops, who are its presiding officers but not members of it, are subject to its direction and answerable to it for its moral as well as official conduct.

CONFESSION (*ante*), in law, is a voluntary declaration, made by one who has committed a misdemeanor or a crime, to some other person, of the agency or participation which he had in the offense. Also, the admission of a prisoner that he is guilty of the offense with which he is charged. If made before a magistrate or in the course of judicial proceedings before a court, such confessions are "judicial;" if made anywhere else, they are "extra judicial." An entirely voluntary confession is admissible in evidence; but not so if procured through inducements, threats, promises or hopes, of escape or favor. A confession in answer to questions by a magistrate or by any other person is admissible. A prisoner's confession when the *corpus delicti* is not otherwise proved, is not sufficient to warrant conviction.

CONGAREE RIVER, in South Carolina, formed by the junction of the Broad and the Saluda about the middle of the state. After a course of 50 m. it unites with the Wateree, after which the two are called the Santee. The Congaree is therefore only 50 m. long. It is navigable for steamboats.

CONGENITAL DISEASES are such diseases as are acquired during the period of pregnancy. They are hereditary and non-hereditary. Among those which are hereditary are syphilis and some chronic skin diseases; and they may be inherited from either parent. The mother may also communicate small-pox and other acute skin diseases. Among the non-hereditary are congenital hernia, and hydrocephalus. In this connection may be mentioned malformations, such as double toes and fingers, which are hereditary, and other monstrosities non-hereditary.

CON'GLETON, HENRY BROOKE PARNELL, Lord, 1776-1842; son of John Parnell, chancellor of the Irish exchequer, and a descendant of Parnell the poet. For 35 years he represented Queen's co., Ireland, and Dundee, Scotland, in the English parliament. In 1841, he was made baron Congleton. He is the author of the *Principles of Currency and Exchange; The Penal Laws against Irish Catholics; Paper Money, Banking, and Over-Trading*, etc. He became insane and committed suicide.

CONGO SNAKE, found in the s.w. United States. It lives in muddy places and feeds on small fishes and insects. It is sometimes 28 in. long; blue-black above, tinged with violet, the under-side dark purple. It is amphibious, and not venomous.

CONGREGATIONALISM (INDEPENDENTS, *ante*), a church polity according to which any congregation of believers, associated for Christian worship and work, mutual edification, and the maintenance of Christian ordinances, is a church of Christ, subject to no ecclesiastical authority, though bound by the law of Christ to be in fellowship especially with neighboring churches and generally with the whole body of believers. This system recognizes no church as statedly organized on any field wider than that of the local community. If in the administration of its affairs the interests of other churches seem involved, or if it have vainly sought to settle serious difficulties within itself, it seeks the advice of neighboring churches in a council; but it is not bound to follow such advice against its own deliberate and conscientious conviction of Christian duty. The cases are, however, very rare in which the decision of a council is not found to be practically self-enforcing by moral pressure. A member whose rights are invaded by the action of the church, may request the church to join with him in calling a council to consider the case; if his request be disregarded, he may call an *ex parte* council. A council is always limited strictly by the letter-missive which convenes it. That is its charter, and it has no functions as to any case or question not distinctly specified therein. Each Congregational church frames or adopts its summary of doctrines, in accordance with its own interpretation of the Scriptures, elects its own pastor and other officers, admits or rejects candidates for its membership, admonishes and rebukes offenders, and withdraws fellowship from them if they prove incorrigible. Every male member of full age has the right to vote in church affairs, and in some churches the right for women and minors to vote is admitted. The officers of a church are a pastor (usually the moderator in church meetings), and deacons in number as may be needed. A clerk, a treasurer, and needful committees may be appointed. The deacons serve at the communion table, care for the needy members, and are expected to aid the pastor in watching over all the interests of the brotherhood. In theory, their office involves the charge of the temporalities of the church, but practically their duties in this regard are in the hands of a board of trustees appointed by the "society," which provides for all the temporal affairs of the church. The deacons are elected sometimes for life, and sometimes for a period of time. The church has power to ordain its own minister if it see necessity so to do, but this is almost universally avoided as an irregularity, and when

a pastor has been elected, his ordination is by a council of neighboring churches called for this purpose, and present by their pastors and delegates. The council examines the candidate as to his moral, spiritual, and intellectual qualifications, and, if it find him worthy, ordains or installs him by such religious services as to it may seem fit. These services usually embrace a sermon, a prayer of ordination, with laying on of hands, a charge to the pastor, with the right-hand of fellowship, and an address to the church and congregation. It occasionally happens that a council called to aid in the settlement of a minister fails to be satisfied with his fitness, and therefore declines to act in inducting him into office. In such cases the church, in its discretion, either relinquishes the candidate, or (very rarely), continuing him in the pulpit, takes upon itself the responsibility for whatever may be the effect of its action upon its standing and fellowship with other churches.

Congregationalism, like every other church polity, may be associated with any form of theological doctrine. The Baptist, Unitarian, Universalist, and some other denominations adopt the polity, though they do not take the name. The "Congregationalists" so called, and bearing this as their distinctive title, are clearly evangelical, and are deemed Calvinistic, though scarcely so except in a sense somewhat modified by modern thought. Their ecclesiastical polity, whose central principle is the independence of the local church under the law of Christ alone, tends to make subordinate questions of mere form or method, to keep open the path of free inquiry, and to foster the spirit of progress; while the moral influence of the great body of churches voluntarily associated in religious fellowship and for co-operation in Christian work, operates as a check, all the more powerful because unostentatious, upon hasty and ill-considered divergences from the old paths.

It is claimed by Congregationalists that their system of government is in complete accord with that of the apostolic age, and conformed to the genius and spirit of Christianity; but they do not trace it in direct historical line further back than the period of the Protestant reformation. Their theory is that Congregationalism is a return to the primitive order which had been rejected for the ecclesiasticism of Rome or of great national churches. John Robinson is generally regarded as the father of the system as revived in modern times, though doubtless he was only one of many founders. He was prominent among those who sought refuge in Holland from the persecutions of the church of England. Settling first in Amsterdam in 1609, he and his little flock afterwards removed to Leyden, where, with constant longings for their native land, they tasted the sweets of religious liberty. Seeing no prospect that the persecution in England would cease in their time, and finding their situation not altogether pleasant among a people whose language and habits were different from their own, a large portion of the little company concluded to seek a permanent home in the wilderness of America. Having come to this resolution, they organized themselves as a church, and, with the blessing of their pastor, who expected to follow them at a later date, embarked on the *Mayflower* at Delft Haven in 1620. The little colony landed in Plymouth, on the coast of Massachusetts, where they laid the foundations of a church and state joined together after the pattern of the Jewish theocracy, and it was not until after the colonies became independent of England that the ties which bound the two were wholly severed. Robinson died before he could join the colony. The Plymouth church, formed in Holland, was the first in New England. The first church ever organized in New England was gathered at Salem, Mass., Aug. 6, 1629. The colonies of Massachusetts Bay, Connecticut, and New Haven were mainly composed, not of "Independents" like the Plymouth settlers, but of "Non-conformists," who did not at first contemplate a severance of their connection with the church of England, but sought chiefly the reform of that church in certain practices by them deemed idolatrous and popish. But the free air of the new world created in them a thirst for wider liberty, and the religious life of New England externally considered was soon molded to the form of Congregationalism. The idea of complete religious liberty, as now understood, was then hardly known in the world, certainly not accepted by any large party, and Congregationalism, wielding the civil authority, assumed for itself rights which it refused to dissenters. Thence the history of the colonial period of New England is not free from the stain of persecutions which no one at this day seeks to justify. Episcopalians, Baptists, Quakers, and others, felt the strong hand of civil and social proscription. The spirit of freedom, however, was even then working in the minds and hearts of many thoughtful men, and slowly preparing the way for the complete liberty of religious belief and worship which is now the glory of the republic. The whole spirit and tendency of Congregationalism is universally admitted to be at war with persecution in all its forms.

Congregationalists hold to no order in the ministry higher than that of the pastor of a local church. Religious fellowship among them finds expression in conferences formed of a number of churches in a given neighborhood, and meeting at stated times for worship, mutual edification, and the promotion of missionary and benevolent work; in state associations or conferences composed of ministers and laymen delegated by the smaller conferences, and meeting annually; and, finally, of late, in a national council, meeting once in three years—an addition to the system favored by many, but gravely distrusted by some. None of these bodies have the least ecclesiastical authority or

power. In the Congregational system, the society or parish, composed of the pew-holders and worshipers, whether members of the church or not, acts concurrently with the church in the settlement and dismissal of a pastor, and elects the trustees in whom the law vests the management of the church property.

The forms of worship in Congregational churches are usually simple, varying, however, according to the taste of the pastor or the preferences of the congregation. There is general similarity, but no binding rule as to the parts or the order of service. Of late years the practice of responsive reading of selections from the Psalms, and of reciting in unison the Lord's prayer, is gaining favor. The ordinances observed are baptism and the Lord's supper. Infant baptism is generally practiced, but not strictly enforced. Persons baptized in infancy are admitted to the church like others with a public confession of Christ. The officiating minister, before the administration of the Lord's supper, usually invites other than members of the local church to partake, expressing such invitation not in any prescribed form, but in terms more or less strict according to his own views or those of the church. In most instances the invitation is confined to members of evangelical churches, or churches of Christ in good and regular standing; in others it is so broad as to include all who love and follow Christ, whether members of a church or not. Differences like this illustrate the freedom and elasticity of Congregationalism.

Until within the last 30 years Congregationalism was mainly confined to New England, making no effort for its own extension in the region beyond, and freely giving its force to the building up of other denominations; but it has recently made large advances in the states of the north-west, in those of the Pacific coast, and even in the middle and southern states. The number of state organizations is 31; of churches 3,620, with a total membership of 382,920; of ministers 3,585. Benevolent contributions of the churches in 1879, so far as reported, \$1,098,691.43; home expenditures, \$2,594,228.81. The national co-operative societies of the Congregationalists are the American board of commissioners for foreign missions, the American home missionary society, the American missionary association, American Congregational union, Congregational publishing society, American college and educational society, the western education society, and the American Congregational association. Number of ordained missionaries in foreign fields, 119. There are seven theological seminaries under Congregational control, with an aggregate of 298 students. The Congregational churches have always been noted for their high standard of ministerial education; and, during the present century, for their earnestness and liberality in the work of missions among the heathen.

CONGRESS, UNITED STATES, the only legislative body of the nation, is composed of two houses: the senate, having two members from each state; and the house of representatives, having a membership based on population (see APPORTIONMENT BILLS), though every state must have at least one member. Senators are chosen by the state legislatures, the two houses of a legislature holding a joint meeting or jointly voting on the same day; elections are by ballot; senators must be at least 30 years of age on taking their seats, and their term of office is six years. There being now (1880) 38 states, there are 76 senators. They are paid \$5,000 a year with a small allowance for stationery and mileage. The vice-president of the United States is the presiding officer of the senate, but he has no vote unless in the case of a tie. The senate has equal power with the house in legislation, except that bills for revenue purposes must originate in the latter body. The senate has the sole power of trying impeachments. When the president is impeached, the chief-justice of the United States supreme court must preside, and the vote of two thirds of the senators present is requisite to a verdict of conviction. The house of representatives now consists of 293 members, in the following numbers from the several states: New York 33, Pennsylvania 27, Ohio 20, Illinois 19, Indiana and Missouri 13 each, Massachusetts 11, Kentucky and Tennessee 10 each, Georgia, Iowa, Michigan, and Virginia, 9 each; Alabama, North Carolina, and Wisconsin, 8 each; New Jersey 7; Louisiana, Maryland, Mississippi, and Texas, 6 each; Arkansas, California, and Connecticut, 4 each; Kansas, Minnesota, Vermont, West Virginia, and New Hampshire, 3 each; Florida and Rhode Island, 2 each; Colorado, Delaware, Nebraska, Nevada, and Oregon, 1 each. The apportionment to follow the census of 1880 will greatly change these numbers; the states w. of Ohio will have a very large increase, while the southern states must lose heavily, and some of the eastern states also may lose. Members of the house are chosen in separate districts by popular vote, and their term is two years. The house elects one of its number to be speaker, or presiding officer. The course of legislation need not be explained. In case of a veto by the president, it requires a two-thirds vote in each house to re-enact the bill. Members of the house must be 25 years old. They are paid the same as senators. The whole number of members of the house has been regulated by the decennial apportionments as follows: In 1789, 65 members; in 1793, 105; 1803, 141; 1813, 181; 1823, 213; 1833, 240; 1843, 293; 1853, 234; 1863, 243; 1873, 293. Under the first apportionment there was one member to 30,000 citizens; under the last, one member to 131,425.

CONGREVE, Sir WILLIAM, 1772-1828; the inventor of the congrève rocket, a native of Staffordshire, Eng. He had a commission in the artillery, and became lieut.gen.

He was also a member of parliament, and author of an "*Elementary Treatise on the Mounting of Naval Ordnance*, and a *Description of the Hydro-pneumatic Lock*.

CO'NI, or CUNEO, a province of Piedmont, Italy, on the French border; 2,656 sq.m.; pop. '72, 618,232. The surface is about equally divided between plains and hills. The province is watered by streams that run into the Po. The chief productions are wheat, corn, hemp, rice, and silk. The capital is the city of the same name.

CO'NIINE, or CONINE, an alkaloid constituting the poisonous principle of poison hemlock; formula, $C_8H_{15}N$. It is an oily liquid, specific gravity 0.89, boiling at 333° F. It has a penetrating and repulsive odor, and a sharp taste. It is easily soluble in alcohol and ether, but slightly so in water. Its action is that of an acrid narcotic poison. In common with the seeds and leaves of the plant, the alkaloid is used in pharmacy as a narcotic.

CON'INGTON, JOHN, 1825-69; a native of Lincolnshire, Eng., remarkable for precocity, knowing the letters of the alphabet when he was but 14 mos. old, and reading well at $3\frac{1}{2}$ years. He was educated at Oxford, and in 1854 was appointed to the newly founded chair of Latin literature in Corpus Christi college. Among his works were translations of the *Agamemnon* and the *Choephori* of Eschylus; Virgil's *Eclogues* and *Georgics*; the *Odes of Horace*; Virgil's *Eneid*; the 12 last books of the *Iliad*; and the *Ars Poetica* of Horace.

CONKLING, ROSCOE, b. in Albany, N. Y., Oct. 30, 1829. He was bred to the law, and settled in Utica in 1846. Twelve years afterwards he was chosen mayor of the city. In the same year he was elected a member of congress, and was returned three time afterwards, serving in the house from 1861 to 1869. In 1872, he was elected U. S. senator, and re-elected in 1879. He is a remarkably facile and commanding orator, and has for several years been the recognized leader of the republican party in the state.

CONNEAUT, a village in Ashtabula co., Ohio, 2 m. s. of lake Erie near the Pennsylvania line; pop. '70, 1163. There is a good harbor on the lake, and the Lake Shore railroad passes through the village. Conneaut is noted as the landing place of the first white settlers of northern Ohio, in 1796.

CONNECTICUT (*ante*), (from the Indian name of the river, Quon-ek-ta-kot, meaning "long river"); one of the original 13 states. The region was first explored by the Dutch from New Amsterdam (New York), but they made no settlement until 1633, when they built a fort called the "house of hope," on the site of the present city of Hartford, purchasing the land from the Indians. An English patent covering all the territory n. and s. from some distance above Montreal to near Philadelphia, and running from the Atlantic ocean westward an indefinite distance to the "great south sea," had been granted in 1620 to the New England proprietors, and these proprietors in 1631 made a grant of territory 120 m. wide along the coast from Narragansett river s. toward Virginia and w. to the Pacific. When the English undertook to settle in 1633, the Dutch threatened war, but finally sold them the "house of hope," and Connecticut became freely opened to the New Englanders, who made their first permanent stand at Wethersfield in 1634, though a small party of them had previously established a trading-house at Windsor. In 1638, Rev. John Davenport led a company of emigrants and settled at New Haven, and very soon there were white settlements at Hartford, Windsor, Saybrook, and some other places. In 1637, the new towns threw off the New England government and set up for themselves, and the next year the New Haven colony joined the others. In the same year there was a short war with the Pequot Indians, who were defeated, and the tribe completely broken up. In 1662, a new charter was granted to John Winthrop by Charles II., and very soon all the settlements were united under one government, New Haven, however, standing out for a considerable period. We should mention that as early as 1639, a constitution had been adopted at Hartford, now referred to as "the first one written out as a complete form of civil order in the new world, and embodying all the essential features of the constitutions of the American states, and of the republic itself, as they exist at the present day." Under this constitution, until 1661, the only recognized authority was the supreme power of the commonwealth, and the people were practically independent. The charter granted by Charles II. was so near to our system of government that no important changes were needed when Connecticut became a member of the union—in fact, the organic law of the first settlers was not much altered until the adoption of a new constitution by the state in 1818. James II. made strenuous efforts to revoke all the New England charters, and in 1687, sir Edmund Andros, whom James had made governor of all New England and New York, appeared in Hartford during the session of the assembly and demanded the desired document; but upon search it was not to be found, and is believed to have been hidden away in the hollow of a tree which was famous afterward as the "charter oak." James was driven from the throne in 1689, and the Connecticut colonial government renewed its complete authority.

From the union of the early settlements until 1701, Hartford was the seat of government; after that New Haven shared the honor; and the law making both state capitals continued until 1874, the legislature meeting twice in each year, in May in one city and in Oct. in the other, until 1818, and then yearly in the cities alternately until 1874,

when, by vote of the people, Hartford was made the legal capital. The colony was active in the early Indian and the French wars, and among the most zealous in the war of the revolution, its legislature having early in June, 1776, instructed its delegates in the continental congress to propose, in substance, the famous declaration that was made on the 4th of July. The settlers of Connecticut were mainly Puritans, and had all the religious earnestness of their age. Though they did not go to the extreme of burning witches and persecuting Quakers, their laws were strict, of which occasion was taken to attribute to them the whimsical code known as the "blue laws," a code which never existed except in a malignant history written by Samuel Peters, an Episcopal minister who adhered to the Tories during the revolution. During the revolution, gen. Washington relied much upon Jonathan Trumbull, then governor of the colony, a wise and excellent counselor, whom Washington addressed as "Brother Jonathan." Reminiscences of the original grants to Connecticut long remained. The extension westward to the "great southern ocean," gave Connecticut a strip of land 60 m. wide to the Pacific; and these claims were recognized in western New York and northern Ohio, but long before the land became of great value, amicable arrangements were made and the claims of Connecticut were relinquished. The portion in Ohio was over 3,600,000 acres, and is still known as the "western reserve." During the second war with Great Britain, Connecticut was the stronghold of those who opposed the war, and the "Hartford convention," held by leading federalists, led to the downfall of the party, and the name of the assembly was for half a century used as an opprobrious term. It is now generally conceded that this opprobrium was without just cause. In the rebellion, Connecticut did her full share for the support of the government, furnishing 50,000 men, and contributing money freely.

Connecticut is one of the smallest of the states, its area being only 4,674 sq. m., lying between 41° and 42° n., and about 71° 50' to near 73° w.; with Massachusetts on the n., Rhode Island on the e., New York on the w., and Long Island sound on the south. In shape it is nearly a parallelogram of about 90 by 50 miles. The whole state lies on the s. slope of the New England hill region, and is hilly, though with no very high summits. The highest elevations are in the n.w. portion of the state. The largest river is the Connecticut, with a varying width, but usually not far from a quarter of a mile, and navigable to Hartford, 50 m. from the sound, into which it empties. Its course presents a series of beautiful views. The chief affluent of the Connecticut in the state is the Tunxis. In the e. part of the state is the Thames, formed by the Shetucket, the Yantic, and the Quinnebaug; it is navigable to Norwich. In the w. are the Housatonic and the Naugatuck, its affluent; the Housatonic being navigable to Derby, where the Naugatuck comes in. Smaller streams furnish abundant water-power. There are no large lakes. The Blue Hills of Southington, a part of the Holyoke range from Massachusetts, and the Housatonic Hills, are the prominent elevations.

Connecticut is not conspicuous for mineral wealth. Gold is unknown, and silver is found only in minute quantities in other ores. Copper mines were once of some consequence, but are unimportant since the working of the rich deposits at lake Superior. Iron is abundant, and has been worked for more than a century. Lead with slight traces of silver has been tried, but its working is not profitable. Marble and limestone are abundant and of excellent quality, and there are vast deposits of freestone, which is sent in immense quantities for building to New York and other cities. There are also flagging and tiling slates, clay of all kinds, granite, gneiss, and sulphate of barytes in great abundance. Some mineral springs are known, but none have become especially famous. Timber was formerly plentiful in Connecticut, and there are yet left oak, hickory, tulip, chestnut, ash, maple, birch, beech, and some other useful trees. Pine and hemlock are nearly gone. Wild grapes and berries are plentiful. The wild denizens of the forest, such as bears, panthers, and wolves, long ago disappeared. A few foxes remain; rabbits are in abundance, also squirrels, woodchucks, muskrats, moles, and the Norway and water rats. Now and then an eagle is seen; hawks, crows, ravens, and owls are found, with gulls along the shore; song birds are numerous; game birds, grouse and woodcock are increasing under the protection of law; snipe and wild ducks and geese are abundant. Of fish, Connecticut has immense quantities, among the most valuable being shad, black, blue, rock, bass, pickerel, perch, sheepshead, weakfish, and catfish. Attention has been given recently to the cultivation of salmon. Mollusks and shellfish are very abundant, and great quantities are sent to the markets of large cities. Venomous snakes are scarce. The climate of Connecticut is severe, like that of all New England. Spring opens rapidly in April, cold weather comes about mid-November, and the winters are usually severe, snow being generally several inches deep, except near the coast, for many weeks at a time. The summers are correspondingly warm; the brief autumn is very pleasant, though often foggy. Swamps and marshes do not abound, and miasmatic diseases are almost unknown.

The state excels in variety and extent of manufactures. Agriculture is a large interest, however, and good crops are raised in the numerous valleys, while the uplands furnish excellent pasturage and cheap fuel. The principal fruits are apples, pears, grapes, and berries; and the chief crops are hay, oats, rye, corn, tobacco, and potatoes. The tobacco is of a superior kind, the leaves being excellent for "wrappers" of cigars. Dairy products are also among farming resources. The farms are usually small,

averaging in 1870 about 60 acres of improved land each. For many years the sons of native farmers have sought homes in the west, and a considerable portion of the land in Connecticut is now in possession of emigrants from foreign countries. In point of value, woollens stand first among the manufactured goods; then cotton, hardware, iron-work, machinery, paper, india-rubber, wheeled vehicles, sewing-machines, hats, caps, silks, fire-arms, and cutlery. Though the smallest of the states except Delaware and Rhode Island, Connecticut stands eighth in the value of manufactured products. Clocks from Connecticut of all sizes and prices are scattered all over the world. In 1870, the value of clocks made in the United States was returned at \$2,509,643, of which \$2,245,043 was from this state.

Connecticut has four ports of entry on the sound—Stonington, New London, New Haven, and Fairfield; and on the river, Middletown. Foreign commerce is small, and these ports are not important.

There were issued in Connecticut Jan. 1, 1879, 116 newspapers and periodicals—14 daily, 4 semi-weekly, 83 weekly, 3 bi-weekly, 1 semi-monthly, 6 monthly, 1 bi-monthly, and 1 quarterly. The school age is 4 to 16 years, and the number between these ages in 1878 was 138,407, of whom 119,328 were enrolled in schools; average attendance, 77,218; school days, 178; teachers, 2,711; fund, \$2,791,993; income from all sources, \$1,509,159; expenses, \$1,506,177. There is a normal school at New Britain with 18 male and 122 female students, and two training schools in New Haven with 1000 pupils. Yale college, non-sectarian, though historically affiliated with the Congregationalists, stands at the head of the higher institutions, with 97 professors and 1026 students. Trinity college at Hartford (Prot. Ep.) had at last report 15 instructors and 110 students; and Wesleyan university (Meth. Ep.) at Middletown had 17 professors and 163 pupils. The Yale divinity school (Cong.) had 11 professors and 107 students; the Berkeley divinity school at Middletown (Prot. Ep.), 7 teachers and 27 students; and the theological institute of Connecticut at Hartford (Cong.), 9 instructors and 38 students. The Sheffield scientific school (Yale college) had 26 instructors and 196 pupils; the medical department of Yale, 11 teachers and 60 students; and the Yale law school, 10 teachers and 59 pupils. The latest addition to Yale is the professorship of Chinese language and literature. Both sexes are admitted to the Wesleyan university.

Besides abundant steam navigation on the rivers and the sound, Connecticut has 21 railroads within or passing through her territory. The principal are the Hartford, Providence, and Fishkill, from Waterbury to Providence, R. I., 122½ m.; New York, New Haven, and Hartford, Springfield, Mass. to New York, 123 m., with branches; New London Northern, from New London to Miller's Falls, Mass., 100 m.; New Haven and Northampton, from New Haven to Williamsburg, Mass., 84 m.; Housatonic, from Bridgeport to Mass. state line, 74 m.; Norwich and Worcester, from Norwich to Worcester, 59½ m.; Naugatuck, from Naugatuck to Winsted, 56½ m.; Boston and New York air line, from New Haven to Willimantic, 50 m.; Shore line, from New Haven to New London, 50 m.; Connecticut Western, from Hartford to New York state line, 66½ m.; Connecticut Valley, from Hartford to Fenwick and Saybrook, 46½ m.; Shepaug, from Litchfield to Hawleyville, 32½ m.; Danbury and Norwalk, from Danbury to South Norwalk, 24 m.; Connecticut Central, from East Hartford to Mass. state line, 20½ m.; and seven roads from 13 m. to 2½ m. long.

The rights of women in Connecticut are well guarded. Real estate acquired by a married woman's services, or conveyed to her for a consideration, may be held for her own use. The husband is trustee of a wife's personal estate, which upon his death falls to her or her devisees, legatees, or heirs, as though she had never been married; and married women may convey by devise the same as single persons, except that a husband (if he have not abandoned her) must unite in conveying by deed. Divorce may be had for fraudulent contract, adultery, desertion, and neglect of duty for three years (the person not heard of), for seven years' habitual intemperance, cruelty, for imprisonment for life, and for certain crimes. The constitution of Connecticut is almost the same as in other northern states, providing for distinct legislative, executive, and judicial officers. The governor must be 30 years of age, or over; is chosen annually, and is paid a salary of \$2,000. His veto may be overcome by a majority in each house. The general assembly consists of a senate of 21 members, and a house of representatives according to population, districts being changed by the legislature after every federal census. Every town incorporated before 1785 has two members, and every later town one member. Each member is paid \$300 per year. All elections are by ballot, and voters must be citizens 21 years old or over, and able to read any article in the United States constitution. The pardoning power is in the general assembly. The judiciary is a supreme court of errors, consisting of a chief and four judges; a superior court of six judges, together with the five of the court of errors; five courts of common pleas, each with one judge; special courts for certain cities; and justices of the peace. The higher judges are chosen by the assembly for eight years, and are disqualified on reaching 70 years of age; salary \$4,000. Provision is made in the constitution for free schools, to support which there is an ample fund which was set apart when the state sold her claim to the western reserve in Ohio. Connecticut has four members of congress and six electoral votes. For president, her votes have been: 1789 (7 votes), Washington 7, Adams 5, Samuel Huntington of Conn. 2; in 1792 (9 votes), all for Washington and Adams; in 1796,

Adams 9, Thomas Pinckney 4, John Jay 5; in 1800, all for Adams and Pinckney; in 1804 (when president and vice-president were first separately voted for), Charles C. Pinckney and Rufus King; in 1808, Pinckney and King; in 1812, George Clinton and Jared Ingersoll; in 1816, Rufus King, and for vice-president, James Ross of Pa. 5, and John Marshall of Va. 4; in 1820, Monroe and Tompkins; in 1824 (only 8 votes), J. Q. Adams and Andrew Jackson; in 1828, Adams and Richard Rush; in 1832, Henry Clay and John Sergeant; in 1836, Van Buren and R. M. Johnson; in 1840 (only 6 votes), Harrison and Tyler; in 1844, Clay and Frelinghuysen; in 1848, Taylor and Fillmore; in 1852, Pierce and William R. King; in 1856, Fremont and Dayton; in 1860, Lincoln and Hamlin; in 1864, Lincoln and Johnson; in 1868, Grant and Colfax; in 1872, Grant and Wilson; in 1876, Hayes and Wheeler. The chief officers of the general government from Connecticut have been a secretary of the treasury, two secretaries of war, four post-master-generals, one attorney-general, one supreme court justice, three presidents *pro tem.* of the senate, and one speaker of the house. (For latest statistics, see APPENDIX.)

CONNER, DAVID, 1792-1856; b. Penn. He entered the United States navy in 1809 as midshipman, and was in the action (Feb. 24, 1813) when the American *Hornet* captured and sunk the British *Peacock*. In 1815, in the action between the *Hornet* and the *Penguin*, he was dangerously wounded. He became commander in 1825, and capt. in 1835. During the war with Mexico, he was on blockade duty in the gulf. After the war he was in command of the Philadelphia navy-yard.

CON'OLLY, JOHN, 1794-1867; a native of Lincolnshire, England. He studied medicine at Edinburgh, and practiced at Chichester and Stratford-on-Avon. In 1827, he was appointed professor of the practice of physics in University college, London. His most noteworthy work was done some years afterwards, by carrying out on a large scale the principle of non-restraint in the treatment of the insane. He also wrote much upon insanity and its treatment.

CONON, an Athenian gen., and one of the ten general officers who superseded Alcibiades, 406 B.C. In 405, the Athenian fleet was surprised by Lysander at Ægospotami, and Conon fled to his friend Evagoras, king of Cyprus. On the outbreak of the war between Sparta and the Persians, he obtained with Pharnabazus joint command of a Persian fleet. With this fleet, in 394, he defeated the Lacedæmonians near Cnidus, and thus deprived them of the empire of the sea, and finally completed his services to his country by restoring the long walls and fortifications of the Piræus.

CONRAD, ROBERT T., 1810-58; b. Philadelphia; a lawyer and author. While a student he wrote *Conrad of Naples*, a tragedy successfully represented in many cities. He wrote also for the press, and in 1822, began the *Daily Intelligencer*, which was soon merged in the *Philadelphia Gazette*. He edited *Graham's Magazine*, and was judge of the court of sessions. His best known drama is *Aylmere* (or *Jack Cade*), in which Edwin Forrest represented the hero. He also published a volume of poems.

CONRING, HERMANN, 1606-81; a native of Friesland, studied at Leyden, and was professor of medical science, philosophy, political science, and jurisprudence at Helmstedt. He was also privy counselor to the duke of Brunswick, and confidant of the German emperor. He was a voluminous writer on history, law, science, and theology. Elsie Sophie, his daughter, became distinguished as a poet.

CONSCRIPT FATHERS, a name given to the Roman senators after the expulsion of the Tarquins, when Brutus added 100 to the number of senators, writing the old and new names together—*con-scripti*.

CONSEN'TES DII, the twelve chief roman deities: Jupiter, Apollo, Mars, Neptune, Mercury, Vulcan, Juno, Vesta, Minerva, Ceres, Diana, and Venus.

CONSHOHOCK'EN, a borough on the Schuylkill river and the Reading railroad, 13 m. n.w. of Philadelphia; pop. 3,071. It is a manufacturing place, and has blast-furnaces, rolling-mills, machine-shops, etc.

CONSISTORY (*ante*), the name of the body of officials in each local church of the "reformed" denominations (Dutch or German) in the United States.

CONSTABLE (*ante*). In the United States, the duties of constables in regard to keeping the peace and making arrests are generally the same as in England, but generally only petty constables are retained. There was a high constable in New York until about 50 years ago, but the office was merged in that of chief of police. Philadelphia also has had the office of high constable. Some of the states have an official known as constable of the commonwealth.

CONSTABLE, ARCHIBALD, 1774-1827; widely known as a publisher of books in Edinburgh, Scotland. He was a bibliopolist by nature, and before coming of age went into business on his own account. He took great interest in Scottish literature, and the elegance of his publications soon brought him prominently into notice. Among publications wholly or partially under his care were the *Scot's Magazine* and the *Edinburgh Review*. His acquaintance and friendship with sir Walter Scott is well known, and nearly all the works of the great novelist came to the people through Constable's press. Among his latest effort were the purchase and enlarging of the *Encyclopædia Britannica*, and the starting of *Constable's Miscellany*, a series of original standard works

to be issued in cheap form. This was continued but a short time, and the firm became heavily in debt and failed in 1826, leaving Walter Scott largely involved in their liabilities.

CONSTABLE, JOHN, 1776-1837; an English artist excelling in landscapes and scenes from nature. Among his pictures are "Stratford Mill," the "Hay Cart," "Salisbury Cathedral," "The Loch," "Valley Farm," and "The Cornfield."

CONSTANS, FLAVIUS JULIUS, 320-350; second son of Constantine the great, and emperor of Rome, after having defeated and killed his brother (Constantine II.) at the battle of Aquileia in 340. He was rapacious and profligate, but he protected the Christians and closed many of the pagan temples. His reign became so obnoxious that his troops in Gaul revolted, and sent emissaries to slay him, which they did while he was flying towards Spain.

CONSTANTINE II., 312-40; eldest son of Constantine the great. On the death of his father the empire was divided between the three surviving sons, but Constantine II. being the eldest was considered the emperor.

CONSTANTINE VII., PORPHYROGENITUS, 905-59; Roman emperor of the east, son of Leo VI. He paid more attention to literature than to state affairs, leaving the latter to his wife Helena. It is reported that he was poisoned by his son Romanus, who was his successor. He wrote a life of his grandfather, Basil I., a work on government, for the instruction of his son, and several other treatises.

CONSTANTINE XIII., PALÆOLOGUS, the last of the emperors of the east, b. 1394; killed at the capture of Constantinople in 1453. When Mohammed II. set about the taking of Constantinople and the final subjugation of the eastern empire, Constantine appealed in vain to the princes of Christendom. A long siege preceded the capture of the city, but it was accomplished May 29, 1453, and Constantine was slain by some unknown hand. The body was recognized and the head was brought to Mohammed, but he gave the body an honorable burial.

CONSTANTINOPLE, COUNCILS OF. Eight have been held which are recognized as ecumenical either by the Greek or Latin church, or by both. The *first* was the 2d ecumenical council of the church, convened in 381 by the emperor Theodosius I. to legalize his violent ejection of the Arians from the eastern churches. It consisted of 150 bishops, chosen under the dictation of the emperor and chiefly from the east, besides the semi-Arians, followers of Macedonius of Constantinople, who withdrew after their opinions had been condemned. This council condemned also the Arians, Eunomians, and Eudoxians; it reaffirmed the resolutions of the council of Nice, and declared that the bishop of Constantinople, or new Rome, was, of right, next in rank to the bishop of old Rome; both of them being alike subject only to the emperor. The *second* was the 5th ecumenical council of the church, convened in 553 by Justinian I. to sustain his condemnation of three distinguished teachers of the Antiochian school whose opinions had been collected into "three chapters." There were 165 bishops, mostly eastern, in attendance. They condemned the "three chapters" and included in the sentence Vigilius, bishop of Rome, because he would not condemn them absolutely. The *third* was the 6th ecumenical council, held in 680, and consisting of 289 bishops, including three eastern patriarchs and four Roman legates. Through the influence of the legates, the council condemned the doctrine of Honorius that "as there was only one Christ, so he had only one will," and recognized in him, consistently with the doctrine of two natures in one person, two wills made one by the moral subordination of the human to the divine. The *fourth* was the council held in 692, by command of Justinian II. It is recognized as ecumenical only by the Greeks, and is called "*quinisextum*" because it supplemented the 5th and 6th. It passed more than one hundred canons concerning the morals of the clergy and church discipline. The *fifth* was held in 754 and attended by 383 bishops. It is recognized only by the Greeks. It issued a decree against image worship, which was revoked in 786 by the 2d ecumenical council of Nice. The *sixth* was held in 869, and is recognized only by the Latin church. It deposed the patriarch Photius, restored Ignatius, and enacted laws concerning church discipline. The *seventh* was held in 879. There were 380 bishops present, including the Roman legates. It recalled Photius, repealed the action of the preceding council against him, and defined the position of the patriarch of Constantinople in relation to the pope. The *eighth* was held in 1341, and is called by the Greeks the 9th ecumenical. It condemned Barlaam, an educated monk, as heretical in opposing the monks of mount Athos, who asserted the possibility of attaining, while yet in the body, an intuition of the divine light and essence by a perfect cessation of corporeal life.

CONSTANTIUS, or CONSTANTIUS CHLORUS, FLAVIUS VALERIUS, 250-306 A.D.; Emperor of Rome and father of Constantine the great. He became emperor in 305, when Diocletian abdicated, and ruled over Gaul, Spain, and Britain.

CONSTANTIUS, FLAVIUS JULIUS, b. 317 A.D. He inherited by his father's will the Asiatic provinces and Egypt. He made war upon the Persians, but was defeated. He was favorable to the Arians, and gave the title of *cæsar* (emperor) to his cousin and successor Julian.

CONSTITUTION (*ante*), the organic law under which the national government, and the several state governments, in the United States are carried on. The Constitution of the United States is as follows:

We, the people of the United States, in order to form a more perfect union, establish justice, insure domestic tranquillity, provide for the common defense, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this constitution for the United States of America.

ARTICLE I., Sec. 1. All legislative powers herein granted shall be vested in a congress of the United States, which shall consist of a senate and house of representatives.

Sec. 2. The house of representatives shall be composed of members chosen every second year by the people of the several states, and the electors in each state shall have the qualifications requisite for electors of the most numerous branch of the state legislature.

No person shall be a representative who shall not have attained to the age of twenty-five years, and been seven years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state in which he shall be chosen.

Representatives and direct taxes shall be apportioned among the several states which may be included within this union according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three fifths of all other persons. The actual enumeration shall be made within three years after the first meeting of the congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. The number of representatives shall not exceed one for every thirty thousand, but each state shall have at least one representative; and until such enumeration shall be made, the state of New Hampshire shall be entitled to choose 3; Massachusetts, 8; Rhode Island and Providence Plantations, 1; Connecticut, 5; New York, 6; New Jersey, 4; Pennsylvania, 8; Delaware, 1; Maryland 6; Virginia, 10; North Carolina, 5; South Carolina, 5; and Georgia, 3.

When vacancies happen in the representation from any state, the executive authority thereof shall issue writs of election to fill such vacancies.

The house of representatives shall choose their speaker and other officers; and shall have the sole power of impeachment.

Sec. 3. The senate of the United States shall be composed of two senators from each state, chosen by the legislature thereof, for six years; and each senator shall have one vote.

Immediately after they shall be assembled in consequence of the first election, they shall be divided as equally as may be into three classes. The seats of the senators of the first class shall be vacated at the expiration of the second year, of the second class at the expiration of the fourth year, and of the third class at the expiration of the sixth year, so that one third may be chosen every second year; and if vacancies happen by resignation, or otherwise, during the recess of the legislature of any state, the executive thereof may make temporary appointments until the next meeting of the legislature, which shall then fill such vacancies.

No person shall be a senator who shall not have attained to the age of thirty years, and been nine years a citizen of the United States, and who shall not, when elected, be an inhabitant of that state for which he shall be chosen.

The vice-president of the United States shall be president of the senate, but shall have no vote, unless they be equally divided.

The senate shall choose their other officers, and also a president *pro tempore*, in the absence of the vice-president, or when he shall exercise the office of president of the United States.

The senate shall have the sole power to try all impeachments; when sitting for that purpose, they shall be on oath or affirmation. When the president of the United States is tried, the chief-justice shall preside; and no person shall be convicted without the concurrence of two thirds of the members present.

Judgment in cases of impeachment shall not extend further than to removal from office, and disqualification to hold and enjoy any office of honor, trust, or profit under the United States; but the party convicted shall nevertheless be liable and subject to indictment, trial, judgment, and punishment, according to law.

Sec. 4. The times, places, and manner of holding elections for senators and representatives shall be prescribed in each state by the legislature thereof; but the congress may at any time, by law, make or alter such regulations, except as to the places of choosing senators.

The congress shall assemble at least once in every year, and such meeting shall be on the first Monday in Dec., unless they shall, by law, appoint a different day.

Sec. 5. Each house shall be the judge of the elections, returns, and qualifications of its own members, and a majority of each shall constitute a quorum to do business; but a smaller number may adjourn from day to day, and may be authorized to compel the attendance of absent members, in such manner and under such penalties as each house may provide.

Each house may determine the rules of its proceedings, punish its members for disorderly behavior, and, with the concurrence of two thirds, expel a member.

Each house shall keep a journal of its proceedings, and from time to time publish the same, excepting such parts as may in their judgment require secrecy, and the yeas and nays of the members of either house on any question shall, at the desire of one fifth of those present, be entered on the journal.

Neither house, during the session of congress, shall, without the consent of the other, adjourn for more than three days, nor to any other place than that in which the two houses shall be sitting.

Sec. 6. The senators and representatives shall receive a compensation for their services, to be ascertained by law, and paid out of the treasury of the United States. They shall in all cases, except treason, felony, and breach of the peace, be privileged from arrest during their attendance at the session of their respective houses, and in going to and returning from the same; and for any speech or debate in either house they shall not be questioned in any other place.

No senator or representative shall, during the time for which he was elected, be appointed to any civil office under the authority of the United States, which shall have been created, or the emoluments whereof shall have been increased during such time; and no person holding any office under the United States shall be a member of either house during his continuance in office.

Sec. 7. All bills for raising revenue shall originate in the house of representatives; but the senate may propose or concur with amendments, as on other bills.

Every bill which shall have passed the house of representatives and the senate, shall, before it become a law, be presented to the president of the United States; if he approve, he shall sign it; but if not, he shall return it, with his objections, to that house in which it shall have originated, who shall enter the objections at large on their journal, and proceed to reconsider it. If after such reconsideration two thirds of that house shall agree to pass the bill, it shall be sent, together with the objections, to the other house, by which it shall likewise be reconsidered; and if approved by two thirds of that house, it shall become a law. But in all such cases, the votes of both houses shall be determined by yeas and nays, and the names of the persons voting for and against the bill shall be entered on the journal of each house respectively. If any bill shall not be returned by the president within ten days (Sunday excepted) after it shall have been presented to him, the same shall be a law in like manner as if he had signed it, unless the congress by their adjournment prevent its return; in which case it shall not be a law.

Every order, resolution, or vote to which the concurrence of the senate and the house of representatives may be necessary (except on a question of adjournment) shall be presented to the president of the United States; and before the same shall take effect, shall be approved by him, or, being disapproved by him, shall be repassed by two thirds of the senate and house of representatives, according to the rules and limitations prescribed in the case of a bill.

Sec. 8. The congress shall have power to lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States;

To borrow money on the credit of the United States;

To regulate commerce with foreign nations, and among the several states, and with the Indian tribes;

To establish a uniform rule of naturalization, and uniform laws on the subject of bankruptcies throughout the United States;

To coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures;

To provide for the punishment of counterfeiting the securities and current coin of the United States;

To establish post-offices and post-roads;

To promote the progress of science and useful arts, by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries;

To constitute tribunals inferior to the supreme court;

To define and punish piracies and felonies committed on the high seas, and offenses against the law of nations;

To declare war, grant letters of marque and reprisal, and make rules concerning captures on land and water;

To raise and support armies, but no appropriation of money to that use shall be for a longer term than two years;

To provide and maintain a navy;

To make rules for the government and regulation of the land and naval forces;

To provide for calling forth the militia to execute the laws of the union, suppress insurrections, and repel invasions;

To provide for organizing, arming, and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the states respectively the appointment of the officers, and the authority of training the militia according to the discipline prescribed by congress;

To exercise exclusive legislation in all cases whatsoever over such district (not

exceeding ten miles square) as may, by cession of particular states, and the acceptance of congress, become the seat of the government of the United States, and to exercise like authority over all places purchased by the consent of the legislature of the state in which the same shall be, for the erection of forts, magazines, arsenals, dock-yards, and other needful buildings; and

To make all laws which shall be necessary and proper for carrying into execution the foregoing powers, and all other powers vested by this constitution in the government of the United States, or in any department or officer thereof.

Sec. 9. The migration or importation of such persons as any of the states now existing shall think proper to admit shall not be prohibited by the congress prior to the year one thousand eight hundred and eight; but a tax or duty may be imposed on such importation, not exceeding ten dollars for each person.

The privilege of the writ of *habeas corpus* shall not be suspended, unless when in cases of rebellion or invasion the public safety may require it.

No bill of attainder or *ex post facto* law shall be passed.

No capitation or other direct tax shall be laid, unless in proportion to the census or enumeration hereinbefore directed to be taken.

No tax or duty shall be laid on articles exported from any state.

No preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another; nor shall vessels bound to or from one state be obliged to enter, clear, or pay duties in another.

No money shall be drawn from the treasury but in consequence of appropriations made by law; and a regular statement and account of the receipts and expenditures of all public money shall be published from time to time.

No title of nobility shall be granted by the United States; and no person holding any office of profit or trust under them shall, without the consent of the congress, accept of any present, emolument, office, or title, of any kind whatever, from any king, prince, or foreign state.

Sec. 10. No state shall enter into any treaty, alliance, or confederation; grant letters of marque and reprisal; coin money; emit bills of credit; make anything but gold and silver coin a tender in payment of debts; pass any bill of attainder, *ex post facto* law, or law impairing the obligation of contracts, or grant any title of nobility.

No state shall, without the consent of the congress, lay any impost or duties on imports or exports, except what may be absolutely necessary for executing its inspection laws; and the net produce of all duties and imposts, laid by any state on imports or exports, shall be for the use of the treasury of the United States; and all such laws shall be subject to the revision and control of the congress.

No state shall, without the consent of congress, lay any duty of tonnage, keep troops, or ships of war in time of peace, enter into any agreement or compact with another state, or with a foreign power, or engage in war, unless actually invaded, or in such imminent danger as will not admit of delay.

ARTICLE II., Sec. 1. The executive power shall be vested in a president of the United States of America. He shall hold his office during the term of four years, and, together with the vice-president, chosen for the same term, be elected as follows:

Each state shall appoint, in such manner as the legislature thereof may direct, a number of electors, equal to the whole number of senators and representatives to which the state may be entitled in the congress; but no senator or representative, or persons holding an office of trust or profit under the United States, shall be appointed an elector.*

The congress may determine the time of choosing the electors, and the day on which they shall give their votes; which day shall be the same throughout the United States.

No person, except a natural-born citizen, or a citizen of the United States at the time of the adoption of this constitution, shall be eligible to the office of president; neither shall any person be eligible to that office who shall not have attained to the age of 35 years, and been 14 years resident within the United States.

In case of the removal of the president from office, or of his death, resignation, or inability to discharge the powers and duties of the said office, the same shall devolve on the vice-president, and the congress may by law provide for the case of removal, death, resignation, or inability, both of the president and vice-president, declaring what officer shall then act as president, and such officer shall act accordingly, until the disability be removed, or a president shall be elected.

The president shall, at stated times, receive for his services a compensation, which shall neither be increased nor diminished during the period for which he shall have been elected, and he shall not receive within that period any other emolument from the United States, or any of them.

Before he enter on the execution of his office, he shall take the following oath or affirmation: "I do solemnly swear (or affirm) that I will faithfully execute the office of president of the United States, and will, to the best of my ability, preserve, protect, and defend the constitution of the United States."

* This mode of election of president and vice-president has been modified by the twelfth amendment, *post*.

Sec. 2. The president shall be commander-in-chief of the army and navy of the United States, and of the militia of the several states, when called into the actual service of the United States; he may require the opinion, in writing, of the principal officer in each of the executive departments upon any subject relating to the duties of their respective offices, and he shall have power to grant reprieves and pardons for offenses against the United States, except in cases of impeachment.

He shall have power, by and with the advice and consent of the senate, to make treaties, provided two thirds of the senators present concur; and he shall nominate, and by and with the advice and consent of the senate, shall appoint ambassadors, other public ministers and consuls, judges of the supreme court, and all other officers of the United States, whose appointments are not herein otherwise provided for, and which shall be established by law; but the congress may by law vest the appointment of such inferior officers as they think proper in the president alone, in the courts of law, or in the heads of departments.

The president shall have power to fill up all vacancies that may happen during the recess of the senate, by granting commissions which shall expire at the end of their next session.

Sec. 3. He shall from time to time give to the congress information of the state of the union, and recommend to their consideration such measures as he shall judge necessary and expedient; he may on extraordinary occasions convene both houses, or either of them, and in case of disagreement between them, with respect to the time of adjournment, he may adjourn them to such time as he shall think proper; he shall receive ambassadors and other public ministers; he shall take care that the laws be faithfully executed, and shall commission all the officers of the United States.

Sec. 4. The president, vice-president, and all civil officers of the United States, shall be removed from office on impeachment for, and conviction of, treason, bribery, or other high crimes and misdemeanors.

ARTICLE III., Sec. 1. The judicial power of the United States shall be vested in one supreme court, and in such inferior courts as the congress may from time to time ordain and establish. The judges, both of the supreme and inferior courts, shall hold their offices during good behavior, and shall, at stated times, receive for their services a compensation, which shall not be diminished during their continuance in office.

Sec. 2. The judicial power shall extend to all cases, in law and equity, arising under this constitution, the laws of the United States, and treaties made, or which shall be made, under their authority; to all cases affecting ambassadors, other public ministers, and consuls; to all cases of admiralty and maritime jurisdiction; to controversies to which the United States shall be a party; to controversies between two or more states; between a state and citizens of another state; between citizens of different states; between citizens of the same state claiming lands under grants of different states, and between a state, or the citizens thereof, and foreign states, citizens, or subjects.

In all cases affecting ambassadors, other public ministers, and consuls, and those in which a state shall be party, the supreme court shall have original jurisdiction. In all the other cases before mentioned, the supreme court shall have appellate jurisdiction, both as to law and fact, with such exceptions and under such regulations as the congress shall make.

The trial of all crimes, except in cases of impeachment, shall be by jury; and such trial shall be held in the state where the said crimes shall have been committed; but when not committed within any state, the trial shall be at such place or places as the congress may by law have directed.

Sec. 3. Treason against the United States shall consist only in levying war against them, or in adhering to their enemies, giving them aid and comfort.

No person shall be convicted of treason unless on the testimony of two witnesses to the same overt act, or on confession in open court.

The congress shall have power to declare the punishment of treason; but no attainder of treason shall work corruption of blood, or forfeiture except during the life of the person attainted.

ARTICLE IV., Sec. 1. Full faith and credit shall be given in each state to the public acts, records, and judicial proceedings of every other state. And the congress may by general laws prescribe the manner in which such acts, records, and proceedings shall be proved, and the effect thereof.

Sec. 2. The citizens of each state shall be entitled to all privileges and immunities of citizens in the several states.

A person charged in any state with treason, felony, or other crime, who shall flee from justice, and be found in another state, shall, on demand of the executive authority of the state from which he fled, be delivered up, to be removed to the state having jurisdiction of the crime.

No person held to service or labor in one state, under the laws thereof, escaping into another, shall, in consequence of any law or regulation therein, be discharged from such service or labor, but shall be delivered up on claim of the party to whom such service or labor may be due.

Sec. 3. New states may be admitted by the congress into this union; but no new state shall be formed or erected within the jurisdiction of any other state; nor any

state be formed by the junction of two or more states, or parts of states, without the consent of the legislatures of the states concerned as well as of the congress.

The congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this constitution shall be so construed as to prejudice any claims of the United States, or of any particular state.

Sec. 4. The United States shall guarantee to every state in this union a republican form of government, and shall protect each of them against invasion, and, on application of the legislature, or of the executive (when the legislature cannot be convened), against domestic violence.

ARTICLE V. The congress, whenever two thirds of both houses shall deem it necessary, shall propose amendments to this constitution, or, on the application of the legislatures of two thirds of the several states, shall call a convention for proposing amendments, which, in either case, shall be valid to all intents and purposes as part of this constitution, when ratified by the legislatures of three fourths of the several states, or by conventions in three fourths thereof, as the one or the other mode of ratification may be proposed by the congress; provided, that no amendment which may be made prior to the year one thousand eight hundred and eight shall in any manner affect the first and fourth clauses in the ninth section of the first article; and that no state, without its consent, shall be deprived of its equal suffrage in the senate.

ARTICLE VI. All debts contracted and engagements entered into before the adoption of this constitution shall be as valid against the United States under this constitution, as under the confederation.

This constitution and the laws of the United States which shall be made in pursuance thereof, and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land; and the judges in every state shall be bound thereby, anything in the constitution or laws of any state to the contrary notwithstanding.

The senators and representatives before mentioned, and the members of the several state legislatures, and all executive and judicial officers, both of the United States and of the several states, shall be bound by oath or affirmation to support this constitution; but no religious test shall ever be required as a qualification to any office or public trust under the United States.

ARTICLE VII. The ratification of the conventions of nine states shall be sufficient for the establishment of this constitution between the states so ratifying the same.

Done in convention, by the unanimous consent of the states present, the 17th day of Sept., in the year of our Lord one thousand seven hundred and eighty-seven, and of the independence of the United States of America the twelfth.

AMENDMENTS.*

ARTICLE I. Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech or of the press; or the right of the people peaceably to assemble, and to petition the government for redress of grievances.

ARTICLE II. A well-regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed.

ARTICLE III. No soldier shall, in time of peace, be quartered in any house without the consent of the owner, nor in time of war but in a manner to be prescribed by law.

ARTICLE IV. The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated; and no warrants shall issue but upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.

ARTICLE V. No person shall be held to answer for a capital or otherwise infamous crime, unless on a presentment or indictment of a grand jury, except in cases arising in the land or naval forces, or in the militia, when in actual service, in time of war and public danger; nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb, nor shall be compelled in any criminal case to be a witness against himself; nor to be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use without just compensation.

ARTICLE VI. In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the state and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation: to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the assistance of counsel for his defense.

ARTICLE VII. In suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury shall be otherwise re-examined in any court of the United States than according to the rules of the common law.

* Articles I. to X., inclusive, were proposed by the first congress in 1789-90, Article XI. in 1793, Article XII. in 1803, Article XIII. in 1863, Article XIV. in 1868, and Article XV. in 1870.

ARTICLE VIII. Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishment inflicted.

ARTICLE IX. The enumeration in the constitution of certain rights shall not be construed to deny or disparage others retained by the people.

ARTICLE X. The powers not delegated to the United States by the constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people.

ARTICLE XI. The judicial power of the United States shall not be construed to extend to any suit in law or equity commenced or prosecuted against one of the United States by citizens of another state, or by citizens or subjects of any foreign state.

ARTICLE XII. The electors shall meet in their respective states, and vote by ballot for president and vice-president, one of whom at least shall not be an inhabitant of the same state with themselves. They shall name in their ballots the person voted for as president, and in distinct ballots the person voted for as vice-president; and they shall make distinct lists of all persons voted for as president, and of all persons voted for as vice-president, and of the number of votes for each, which lists they shall sign and certify, and transmit, sealed, to the seat of the government of the United States, directed to the president of the senate. The president of the senate shall, in the presence of the senate and house of representatives, open all the certificates, and the votes shall then be counted; the person having the greatest number of votes for president shall be the president, if such number be a majority of the whole number of electors appointed; and if no person have such majority, then from the persons having the highest numbers, not exceeding three, on the list of those voted for as president, the house of representatives shall choose immediately, by ballot, the president. But in choosing the president, the votes shall be taken by states, the representation from each state having one vote; a quorum for this purpose shall consist of a member or members from two thirds of the states, and a majority of all the states shall be necessary to a choice. And if the house of representatives shall not choose a president, whenever the right of choice shall devolve upon them, before the fourth day of March next following, then the vice-president shall act as president, as in the case of the death or other constitutional disability of the president. The person having the greatest number of votes as vice-president shall be the vice-president, if such number be a majority of the whole number of electors appointed; and if no person have a majority, then from the two highest numbers on the list the senate shall choose the vice-president; a quorum for the purpose shall consist of two thirds of the whole number of senators, and a majority of the whole number shall be necessary to a choice. But no person constitutionally ineligible to the office of president shall be eligible to that of vice-president of the United States.

ARTICLE XIII., Sec. 1. Neither slavery nor involuntary servitude, except as a punishment for crime whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

Sec. 2. Congress shall have power to enforce this article by appropriate legislation.

ARTICLE XIV., Sec. 1. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States, and of the state wherein they reside. No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property without due process of law, nor deny to any person within its jurisdiction the equal protection of the laws.

Sec. 2. Representatives shall be apportioned among the several states according to their respective numbers, counting the whole number of persons in each state, excluding Indians not taxed. But when the right to vote at any election for the choice of electors for president and vice-president of the United States, representatives in congress, the executive and judicial officers of a state, or the members of the legislature thereof, is denied to any of the male inhabitants of such state being twenty-one years of age, and citizens of the United States, or in any way abridged, except for participation in rebellion or other crime, the basis of representation therein shall be reduced in the proportion which the number of such male citizens shall bear to the whole number of male citizens twenty-one years of age in such state.

Sec. 3. No person shall be a senator or representative in congress, or elector of president and vice-president, or hold any office, civil or military, under the United States, or under any state, who, having previously taken an oath as a member of congress, or as an officer of the United States, or as a member of any state legislature, or as an executive or judicial officer of any state, to support the constitution of the United States, shall have engaged in insurrection or rebellion against the same, or given aid or comfort to the enemies thereof. But congress may, by a vote of two thirds of each house, remove such disability.

Sec. 4. The validity of the public debt of the United States authorized by law, including debts incurred for payment of pensions and bounties for services in suppressing insurrection or rebellion, shall not be questioned. But neither the United States nor any state shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave; but all such debts, obligations, and claims shall be held illegal and void.

Sec. 5. The congress shall have power to enforce, by appropriate legislation, the provisions of this article.

ARTICLE XV., Sec. 1. The right of the citizens of the United States to vote shall not be denied or abridged by the United States, or by any state, on account of race, color, or previous condition of servitude.

Sec. 2. The congress shall have power to enforce this article by appropriate legislation.

The state constitutions are very much alike in their general provisions. Of late years, and especially since the rebellion, many of the states have amended and modernized their constitutions; but in all cases the state constitution must agree with the federal constitution; any provision conflicting with that is void. There is at this time an interesting question pending in regard to California. In 1879, that state adopted amendments to her constitution, which prohibits the introduction of Chinese into the state as citizens. It is alleged that this provision conflicts with the treaty between the United States and China, and is therefore void, inasmuch as (see UNITED STATES CONSTITUTION) "all treaties made, or which shall be made, under the authority of the United States shall be the supreme law of the land."

CONSTITUTIONAL CONVENTION, a gathering of delegates chosen by the people of a state to prepare amendments to an existing or propose a new constitution. The constitutional convention by which the constitution of the United States was prepared was made up of delegates from the several states, and met in Philadelphia in May, 1787, choosing George Washington as their presiding officer. There can be no other such constitutional convention, since the constitution provides that amendments shall be proposed in congress and submitted to the states for adoption. In the states, delegates to constitutional convention are usually elected by the people. Their work is submitted to the legislature, and (in most states) by the legislature to a direct vote of the people. Among the first of the original states to organize under a constitution was New York, whose first constitutional convention was held in the spring of 1777. Since that time the constitution has been twice radically amended by constitutional conventions in 1821 and in 1846. Rhode Island was the last of the original states to adopt a constitution, which was in 1842. Up to that year she was ruled under the royal charter of 1662. The proceedings of a constitutional convention are usually governed by the rules of state legislative bodies.

CONSTITUTION OF MATTER. The ATOMIC constitution of bodies is discussed when we consider whether they consist of finite ultimate particles called *atoms*, or are infinitely divisible. The CHEMICAL constitution of bodies is the mode in which elementary substances unite to form compounds. The PHYSICAL constitution of bodies is the mode in which particles of matter in forms cognizable by sense, are aggregated to form masses of known qualities. Bodies are classed according to their ability to retain their dimensions when they are subjected to internal stress. A *solid* retains its dimensions even under the influence of a stress which acts in but a single direction. A *fluid* changes its dimensions unless the stress acting within it is uniform in all directions. If the fluid is capable of expanding indefinitely to fill the vessel which contains it, it is a *gas*; if, under ordinary circumstances, the fluid does not so expand, but remains collected in some part of the vessel, it is a *liquid*. The lines of demarkation between these states of matter cannot be sharply drawn; the conditions merge insensibly, the one into the other. Lead is classed as a solid, yet if submitted to suitable pressure, its particles move upon each other, and the given mass takes a new form, as when bullets are made by the cold process from rods of lead. Sulphuric ether is usually a liquid, which, under ordinary conditions, occupies part of a vessel without expanding to fill the whole; but if pressure be removed, as in the receiver of an air-pump, the ether assumes the gaseous form, and resumes the form of a liquid when pressure is restored. Under suitable variations of volume and pressure, part of the liquid may be vaporized, or part of the vapor may be liquefied. Experiments indicate that all liquids may be vaporized, as it is known that all gases and vapors may be liquefied. Substances pass from a liquid to a solid state, or *vice versa*, with different degrees of abruptness. The change occurs suddenly in most metals, as gold, copper, lead, while iron and glass melt by degrees, and harden slowly; whence it comes that iron and glass can be welded, while gold, copper, etc., cannot. When the particles of water, iron, sulphur, etc., solidify, they arrange themselves according to some law of symmetry, forming crystals; other substances, as pitch, becoming constantly more and more viscous, solidify by imperceptible degrees, and without symmetrical or crystalline arrangement of particles. This quality of viscosity indicates a certain attraction between the particles of a fluid, by which they have some power of resisting the stress to which they ultimately yield. In this respect a series of substances may be arranged, beginning with fluids of extreme limpidity, as water, alcohol, ether, passing through certain oils, molasses, tar, molten glass, that may be drawn out into strings, to the metals which even when cold may be drawn into wire, or rolled into sheets. Prof. Forbes explains the motion of the glacier by the viscosity of ice. A substance may seem to lack this property when struck sharply, and may yet show it under constant, though moderate, pressure; thus pitch, when cold, breaks under the hammer, and slowly bends to fit the surface on which it rests.

A body is said to be *elastic*, if, after its dimensions have changed under the influence of a stress, it resumes its original dimensions when the stress is removed. The numerical

ratio of stress to strain, or deformation, is called the *co-efficient of elasticity*; that of strain to stress, the *co-efficient of pliability*. Thus, if 10,000 lbs., applied to a wire of assumed unit of cross section, elongate the wire one per cent, the co-efficient of elasticity of the wire is $\frac{1}{100} = 1,000,000$ lbs. per unit of section. If the stress upon an elastic body be pushed beyond certain limits, different for different substances, the body does not return to its former dimensions, but remains permanently deformed, or may be parted. The limit beyond which the body becomes permanently deformed is the *limit of elasticity*. The limit beyond which it breaks is called the *limit of tenacity*. The body is *soft*, if it may be deformed under a small force; it is *tough* if a large force is required. If rupture occurs before deformation, the body is *brittle*; if it resists great force with neither rupture nor deformation, it is *hard*. The *stiffness* of a body is the measure of its ability to resist deformation; its *strength*, the measure of the force required to break it.

The changes which occur in molecular deformation have been explained thus: We know that the molecules of all bodies are in motion. In fluids the motion is such that any molecule may pass freely from one part of the mass to another; in solids we may suppose that some, at least, of the particles merely oscillate about a certain position so that the configuration of a group of molecules is never much changed from a certain stable form about which they oscillate. If the amplitude of the oscillation exceeds a certain limit, the molecules, failing to return to their old relations, assume new figures of stability, in which the strains are less than in the former figures, and may be zero. This breaking up of configuration may result from wide amplitude of vibration, or from great strain, and we may suppose that the different groups of a mass may have different powers of resistance in either of these respects. We may further suppose that as the groups break up, some of the resulting configurations are such as correspond to a strain which is uniform in all directions. In the ratio in which the groups reach this result, the mass approaches the condition of a fluid of greater or less viscosity. If the mass be conceived as made up of molecules which differ in stability of configuration, it is possible that the weaker have yielded to a force which the stronger have been able to resist, and that the latter retain their original condition; that, subsequently, other forces, as change of temperature or of moisture, or violent vibration, may cause a farther disintegration of the groups of low stability; that then the more stable groups have opportunity to control these weaker groups, and gradually restore the whole mass to the condition and form which it had before any deformation occurred.

CONSUL (*ante*). The consuls of the United States are appointed by the president and senate, and each one gives a bond of \$2,000 to \$10,000 for the faithful performance of his official duties. Among their powers and duties, they have authority to receive protests or declarations which captains, masters, crews, passengers, merchants, and others make regarding American commerce; they are required to administer on the estate of an American citizen dying within their consular jurisdiction and leaving no legal representative, when the laws of the country permit; to take charge of and secure the effects of stranded American vessels in the absence of a master, owner, or consignee; to settle disputes between officers of vessels and their crews; to provide for destitute seamen, and send them to the United States at public expense, etc. They have also various powers and duties in matters of commerce and trade. In some cases they have stated salaries, but the greater portion are paid by fees. They generally have special privileges under local law or usage; but in civil and criminal cases they are on the same footing with non-official foreign residents owing temporary allegiance to the state.

CONSULATE OF THE SEA, a collection of maritime customs and ordinances in the Catalan language, published at Barcelona in the latter part of the 15th century. It contains a code of procedure issued by the kings of Aragon for the guidance of the courts of the consul of the sea, a collection of ancient customs of the sea, and a body of ordinances for the government of cruisers of war. The most valuable portion, *The Customs of the Sea*, has been printed in English in the appendix to the *Black Book of the Admiralty*, London, 1874.

CONTEMPT OF COURT (*ante*), generally manifests itself in the disregard by an inferior court of the orders of a superior court, by the non-payment of costs, the misconduct of ministerial officers, and by the malpractices of attorneys; and may be punished summarily without trial. In this country, great license is given to the press in their comments on cases before court; in some states, it is even permissible to criticise evidence. In most states, contempt of court is carefully regulated by statute.

CONTINENTAL, a term intended as the opposite of provincial, assumed by the revolted American colonies early in the war of the revolution, an effort being made to induce Canada to join the thirteen colonies. Had the Canadians agreed, the whole of the continent under English rule would have been in revolt. The first general representative body of the thirteen colonies was called the "Continental Congress."

CONTINUITY, LAW OF, a principle made known by Leibnitz, which asserts that nothing passes from one state to another without passing through all the intermediate states.

CONTRA COSTA, a co. in w. California, on San Francisco and Suisun bays, 756 sq.m.; pop. '70, 8,461. In the s. portion are several mountains, the chief of which is

Mt. Diablo, but most of the surface is level, and the soil is fertile. Salt and sulphur springs are numerous, and there are valuable coal-mines. Quicksilver and copper also are found. Chief productions, wheat, oats, barley, hay, cheese, butter, wool, and wine. Co. seat, Martinez.

CONTRACT (*CONSENT, ante*), an agreement between two or more parties to do or not to do a particular thing. There are several varieties of contract besides the ordinary agreement which almost every person understands. The chief of these are: Accessory contracts made to assume the performance of a prior contract, such as a suretyship, mortgage, etc.; a contract of beneficence, where only one of the parties is benefitted, as loans, deposits, etc.; certain contracts in which the thing to be done is supposed to depend on the will of the party, or when, in the usual course of events, it must happen in the manner stipulated; commutative contracts, in which what is done, given, or promised by one party, is considered an equivalent to, or in consideration of, what is done, given, or promised by the other; consensual contracts, formed by the mere consent of the parties, such as hiring out; executed contracts, those in which nothing remains to be done, as in a sale with payment and delivery on the spot; entire contracts, where the consideration is entire on both sides; executory contracts, in which some act remains to be done, as an agreement to do a certain thing at a future time; express contracts, where the terms of agreement are openly uttered and avowed at the time of making; gratuitous contracts, in benefit of the person with whom made, without profit or advantage received or promised as a consideration; hazardous contracts, in which the performance depends upon some uncertain future event; implied contracts, such as reason and justice dictate, and which the law presumes that every man undertakes to perform; independent contracts, in which the neutral acts and promises have no relation to each other as equivalent or considerations; mixed contracts, where one of the parties confers a benefit on the other, receiving something of inferior value in return; contracts of mutual interest, entered into for the common and reciprocal interest of both parties, such as partnership; onerous contracts, where something is given or promised as a consideration for the engagement or gift, or some service, interest, or condition is imposed on what is given or promised, although unequal to it in value; oral contracts, ordinary simple agreements; principal contracts, where both parties act on their own account; real contracts, where there must be something more than mere consent, such as a loan, pledge, or deposit, which from their nature require the delivery of the thing itself; reciprocal contracts, mutually agreeing together in business, such as sales, hire, and the like; contracts of record, such as are evidenced by record made, such as judgments, recognizances, etc. (The foregoing are the higher class of contracts.) Severable contracts are those in which the considerations are, by their terms, susceptible of division on either side, as agreeing to pay for a certain work as long as it is done in a certain way. Simple contracts are the lowest form of contracts; mere non-recorded parol agreements. Unilateral contracts are those in which the party to whom the engagement is made makes no express agreement on his part. As to the qualities of contracts, the agreement should be so complete as to give either party his action upon it, and both parties must assent to all its terms. There must be a good and valid consideration. The thing to be done must be one not forbidden by law; immoral as well as fraudulent contracts are void, and so are contracts against public policy, even though not forbidden by statute. The intention of the parties is the marrow of the contract, and this is the key for construction by a court. Words are, if possible, taken in their comprehensive and common-sense meaning.

CONTRACTILITY, the property by which the particles of certain substances resume their normal position when the force that pulls them apart is suspended. Contractility is also the power in animal muscles by which the limbs are moved.

CONTRE'RAS, a village about 12 m. s.e. of the city of Mexico, where a battle occurred between the Americans under gen. Scott and the Mexicans under gen. Valencia. It was a part of the battle of Churubusco.

CONTROL'LER, an officer whose duty it is to keep financial accounts, or to see that they are properly kept and audited. In the U. S. treasury department there are the first and second controllers to examine accounts and sign drafts; and also a controller of the currency, who furnishes circulating notes to banks. In some of the states, as New York, a controller is elected by the people who has general charge of the financial affairs of the state. There is also a controller in the city of New York, elected by popular vote.

CONVERSION, in law, an unauthorized assumption and exercise of the rights of ownership over goods or personal chattels belonging to another, to the alteration of their condition or the exclusion of the owner's rights. Direct conversion is when the person actually appropriates the property of another to his own use, or destroys it, or alters its nature. Constructive conversion is when a person does such acts in reference to the goods, or personal chattels of another as amount, in view of the law, to appropriation of the property to himself. In equity, conversion is the exchange of one species of property for another, which, in the consideration of the law, takes place under some circumstances, although no such change has actually taken place. Land is held to be

converted into money, in equity, when the owner has contracted to sell; and if he die before making a conveyance, his executors, and not his heirs, will be entitled to the money.

CONVERTER, in metallurgy, a receptacle holding iron which is to be converted into steel; a spherical vessel, lined with fire-clay, the bottom having numerous holes through which a powerful blast is driven during the process. From this vessel the liquid steel is poured into molds.

CONWAY, a co. in central Arkansas on the Arkansas river, and intersected by the Little Rock and Fort Smith railroad; 1200 sq. m.; pop. '70, 8,112—630 colored. The surface is diversified and the soil is fertile, producing corn, cotton, tobacco, etc. Co. seat, Lewisburg.

CONWAY, a t. in Carroll co., N. H., on the Saco river, 55 m. n.e. of Concord; pop. '70, 1607. The village of North Conway is famed for beautiful scenery, and is a favorite place for artists, as well as a popular summer resort. On the e. is a range of hills, and a little to the n. is Mt. Kearsarge, 3,367 ft. above tide. On the w. are other peaks, and up the valley of the river Mt. Washington is in view.

CONWAY, HENRY SEYMOUR, 1720-95; a British general who had a command in Germany in 1761, and was secretary of state in the English cabinet in 1765. In 1782, he was appointed commander-in-chief.

CONWAY, MONCURE DANIEL, b. Vt., 1832; graduated at Dickinson college, 1849; began to study law but gave it up and joined the Methodist ministry. He preached in various towns in Maryland, and wrote for a Richmond paper, being then a cordial supporter of extreme southern opinions. His views, however, experienced a change; he left the Methodist church, and entered the divinity school at Cambridge, where he graduated in 1854. Returning to Virginia, he was driven from the state on account of his political opinions. He then became pastor of a Unitarian church in Washington. From this he was dismissed because of his opinions on slavery, and he went to Cincinnati. He lectured in Ohio and in the New England states on the slavery question. In 1863, he visited England, where he lectured and wrote on the war and its effect on slavery. For several years thereafter he labored as a minister in London. Among Conway's publications are *Tracts for To-Day*; *The Rejected Stone*; *The Golden Hour*; *The Earthward Pilgrimage*; *Republican Superstitions*, etc.

CONWAY, THOMAS, 1733-1800; an officer in the American revolution, a native of Ireland, educated in France, and came to America in 1777. He was appointed brig. gen., and took part in the battles of Brandywine and Germantown. Against the protest of Washington, Conway was made inspector-general, in which position he was prominent in the intrigue by which Gates was to be put in Washington's place. In 1778, he resigned, and in the same year he fought a duel with gen. Cadwallader. In 1784, he returned to France, and was appointed governor of Pondicherry and the French East India settlements. When the French revolution came, he was compelled to fly and his life was saved only by the interposition of English authority.

CON'YBEARE, HENRY, son of William Daniel, b. 1823; an English engineer having charge of important works in India. He designed the docks for the port of Bombay. Of late years, he has had charge of engineering works in England.

CON'YBEARE, JOHN, 1692-1755; an English divine, a graduate of Oxford, ordained in 1716. He subsequently became a tutor in the college and was appointed one of the preachers to the king at Whitehall. In 1730, he was chosen master of Exeter college. He had previously attracted notice by the publication of two sermons on *Miracles*, and on the *Mysteries of the Christian Religion*; and in 1732, he published his great work, *A Defense of Revealed Religion*, a reply to Matthew Tindale's *Christianity as Old as the Creation*, which appeared two years before. Conybeare was appointed dean of Christ church, Oxford, and finally bishop of Bristol.

CON'YBEARE, JOHN JOSIAS, 1779-1824; grandson of the bishop of Bristol; professor of the Anglo-Saxon language and of poetry in the university of Oxford. He made valuable contributions to the annals of philosophy and science, and published *Illustrations of Anglo-Saxon Poetry*.

CON'YBEARE, WILLIAM DANIEL, 1787-1857. He was educated at Oxford, and was one of the earliest and most efficient members of the geological society. In 1821, he discovered and described the first plesiosaurus, thereby opening the road in which important discoveries were afterwards made by Owen and others. He was made dean of Llandaff, and was a fellow of the royal society. In 1836, he published a course of theological lectures. His principal work was *Outlines of the Geology of England and Wales*.

CON'YBEARE, WILLIAM JOHN, d. 1857; son of William Daniel, and an English clergyman and writer of essays. He wrote *Perversion, or the Causes and Consequences of Infidelity* (a religious novel), and with Rev. J. S. Howson wrote the *Life and Epistles of St. Paul*. His essays and sermons were collected and published.

COOK, a co. in n.e. Illinois, bordering on Indiana and lake Michigan, intersected by the Illinois and Michigan canal, and by the numerous railroads centering at Chicago;

1027 sq.m.; pop. '70, 349,946. The surface is level and the soil rich, producing wheat, corn, oats, barley, potatoes, hay, wool, and vast quantities of milk and butter for the Chicago local market. Co. seat, Chicago.

COOK, a co. in n. Texas bordering on the Indian territory, drained by the tributaries of Trinity river; 900 sq.m.; pop. '70, 5,315—471 colored. Its surface is prairie and forest, with rich bottom-lands along the streams. Chief productions, corn, oats, cotton, and butter. Co. seat, Gainesville.

COOK, CHARLES, D.D., 1787-1858; an English clergyman, appointed in 1818 to the French mission of the Methodist church in Normandy. It was mainly by his exertions that Methodism was established in France.

COOK, CLARENCE CHATHAM, b. Mass., 1828; graduate of Harvard. He studied architecture, and passed several years in teaching. In 1863, he wrote for the *N. Y. Tribune* a series of articles on American art, and in 1869 he was a correspondent of that journal in Europe. He has made a specialty of art criticism. He has published *The Central Park*, and many articles on his favorite themes.

COOK, ELIZA, b. 1817; an English writer of poetry and essays. Her first book was *Melaia, and Other Poems*. In 1849, she became editor of *Eliza Cook's Journal*, a weekly publication intended to inform and elevate the people. In 1864, she published *New Echoes*; and she is the author of several other works.

COOK, ZEBEDEE, 1789-1858; b. Mass., one of the earliest in introducing to this country the system of mutual insurance, and president of the first company in New York in that business. He was also interested in agricultural pursuits, and was one of the founders of the horticultural society of Massachusetts. He was also instrumental in founding the beautiful cemetery of Mt. Auburn, near Boston, the first burial-place of the kind in the country.

COOKE, AMOS STARR, 1810-71; a native of Connecticut, and graduate of Yale. He entered the Congregational ministry, and was sent as missionary to the Sandwich islands in 1837, where he took charge of the education of the royal family, continuing in the service for 12 years.

COOKE, EDWARD, D.D., b. 1812; a native of New Hampshire, and graduate of Middletown college; teacher of natural sciences in Amenia seminary, N. Y., and principal of a seminary in Pennington, N. J. He was minister in several Methodist churches in Boston, and was for a time the principal of Lawrence university, Appleton, Wis. In 1864, he was chosen president of the Wesleyan academy at Wilbraham, Mass.

COOKE, GEORGE FREDERICK, 1755-1812; an English tragedian, and one of the first of high rank to visit the United States, appearing at the Park theater, New York, in 1810, as "Richard III." He played in all the large cities, but his social habits often interfered with his business, and hastened his death. He was buried in St. Paul's churchyard, New York, and his greater successor, Edmund Kean, built a monument over his grave.

COOKE, JAY, b. Ohio, 1821; for a time one of the leading financiers of the country. He began as clerk in a Philadelphia banking-house, where he soon became a partner. About the time the rebellion broke out, he was at the head of the house of Jay Cooke & Co., and had more than any other man to do with the negotiation of government loans. The firm suspended in 1873, and its failure was one of the principal causes of the financial panic of that year.

COOKE, JOHN ESTEN, b. 1830 in Virginia. He studied law, and was admitted to the bar, but his attention was devoted almost exclusively to literature in the line of novels and poems. Among his publications are *Leather Stocking and Silk*; *The Youth of Jefferson*; *The Virginia Comedians*; *Ellie, or the Human Comedy*; *The Last of the Forresters*; *Henry St. John, Gentleman*; *Life of Stonewall Jackson*; *Wearing of the Grey*; and other works relating to the war of secession. His later publications are *Doctor Van Dyke*, and *Her Majesty the Queen*.

COOKE, JOHN RODGERS, 1788-1854; a native of Bermuda, and a distinguished jurist in Virginia, where for nearly half a century he held a prominent position. He was a member of the legislature, and of the convention for framing the constitution of the state.

COOKE, PHILIP ST. GEORGE, b. Va., 1807; graduated at West Point academy in 1827, and served in the army as a dragoon officer. He served through the war of the rebellion, rising to brevet-brig.gen., and retiring from active service in 1873. In 1856, he published *Scenes and Adventures in the Army*.

COOKMAN, GEORGE G., 1800-41; a native of England, and a Methodist preacher in the United States. In 1838, he was chosen chaplain to congress. He was one of the passengers on the steamship *President*, which sailed from New York for England, Mar. 11, 1841, and was never afterwards heard from.

COOLEY, THOMAS MCINTYRE, b. N. Y., 1824. In 1845, he settled in Michigan and was admitted to the bar. He compiled and published the laws of the state, and in 1858 was made reporter of the supreme court. When the law department of Michigan university was established he was chosen one of the professors. In 1864, he was elected

judge of the supreme court, and in 1867 chief-justice. His most important publication is *The Constitutional Limits which rest upon the Legislative Power of the States of the American Union*. He is the author also of valuable articles in reviews, etc.

COON'TIE, or COONTA, a plant of s. Florida the stem of which furnishes starch from which arrow-root is made. In the Bahamas and other countries it is called sago.

COOPER, a co. in central Missouri, on the Missouri river, intersected by the Pacific railroad of Missouri, and the Boonville Branch road; 558 sq.m.; pop. '70, 20,692—3,352 colored. The surface is undulating and hilly, and the soil fertile, producing wheat, corn, tobacco, etc. There are mines of coal, iron, and lead, and quarries of marble and hydraulic limestone. Co. seat, Booneville.

COOPER, ANTHONY ASHLEY. See SHAFTESBURY, *ante*.

COOPER, PETER, b. New York, 1791. When young he was in humble circumstances, and was obliged to pick up an education as best he could. At the age of 17 he was an apprentice at coach-making, where his conduct was so satisfactory that his master offered to start him in business, but he declined to incur the risk. His first start towards a fortune was by the invention of an improvement in machines for shearing cloth. Such machines were in demand while the importation of foreign cloth was prohibited, during the war of 1812-15. Afterwards they were of little account, and he went into the manufacture of cabinetware, and soon afterwards into the grocery business, and finally he began the manufacture of glue and isinglass, in which business he was engaged for more than half a century, accumulating a handsome fortune. But he was at various periods concerned in other affairs. In 1830, he built works for the manufacture of iron, and afterwards a rolling and wire mill in New York, where he first successfully used hard coal in puddling iron. In 1845, he had a rolling-mill for making railroad bars at Trenton, N. J., where he was the first to roll iron beams for building purposes. At Baltimore, in 1830, he designed and built the first locomotive engine constructed in America, and it was soon afterwards operated successfully on the Baltimore and Ohio railroad. He was also among the earliest promoters of telegraphic communication in the country, and was for 18 years president of the New York, Newfoundland, and London telegraph company. He was among the earliest to become interested in the New York state canal. Before the Erie canal was ready for use, it was a serious question what was the best propelling power for the boats. Cooper then made an experiment of propulsion by means of an endless chain. The chain was driven by the power of elevated water; and on an experimental trip with the governor, De Witt Clinton, and a distinguished party, a speed of 2 m. in 11 minutes was gained. Other power can also be applied to the endless chain. This invention, though not then adopted, has been used in passing boats through canal locks. Always interested in his native city, Cooper was chosen to the board of assistants and of aldermen; and he was also prominent in the establishment of the old public school society. The great object and the great honor of his life, however, was yet to come. Feeling keenly the disadvantages under which he labored when a youth in obtaining education, he long contemplated and finally established an institution (the Cooper union) in which the poor as well as prosperous should have the amplest opportunity for education without cost. In 1854, he laid the corner-stone of a large building at the junction of the Third and Fourth avenues in New York, "to be devoted forever to the union of art and science in their application to the useful purposes of life." This institution, which has had his constant care and help, now counts over 2,000 pupils in the course of the year. It has a school of art for women, with free instruction in all branches of drawing, in painting, wood-engraving, and photography. It has also a free school of telegraphy for young women. These schools for the day-time accommodate 200 to 300 students. In the evenings the free schools of science and art for young men and women give free instruction in mathematics, practical engineering, and practical chemistry; and free lectures are given in natural philosophy and the elements of chemistry. In art, every branch of drawing and painting is taught. A large free reading-room and library with about 300 periodicals and papers, foreign and domestic, and about 10,000 volumes, are at the disposal of all comers. Every Saturday evening during the winter, free lectures are given in the large hall of the Cooper union, sometimes seating 2,000. The annual expense has amounted to about \$30,000. In 1879, the founder added an upper story to this most useful institution. He has just passed his 89th birthday, and is still hale and hearty. His son Edward is at present mayor of New York city.

COOPER, SAMUEL, D.D., 1725-83; a native of Boston, and graduate of Harvard. When but twenty years of age, he succeeded his father as pastor of Brattle street church, where he officiated 37 years. He was active in the revolution, sustaining the cause of the people in sermons and pamphlets, and to him Franklin sent the Hutchinson letters. He was one of the founders of the American academy of arts and sciences.

COOPER, THOMAS, b. 1805; an English chartist, in youth a shoemaker, and self-educated so as to become a schoolmaster at the age of 23. He was the leader of the Leicester chartists in 1841, lectured during the riots, and was found guilty of conspiracy and sedition, and sent to prison for two years. While in jail, he wrote an epic poem, *The Purgatory of Suicide*, and a series of stories, entitled *Wise Saws and Modern Instances*.

Some time afterwards he wrote papers on *The Condition of the People*; later still, *Triumphs of Perseverance* and *Triumphs of Enterprise*. In 1848, he was lecturing; in 1849, editing a radical penny paper; in 1850, conducting a free-thinking publication. Near the close of 1853, he gave up skepticism, and has since almost continually lectured in support of Christianity. His poetical works were published in 1878.

COOPER, THOMAS, LL.D., 1759-1840; a native of London, educated at Oxford; studied medicine and law, and was admitted to the bar. He visited France in the interest of the English democratic clubs, and became conspicuous among the Girondists, for which he was taken to task by Burke in a speech in the house of commons. Cooper wrote a virulent reply, but its circulation was prohibited by the government. Coming to the United States, he started law practice in Philadelphia, and soon mixed in politics in opposition to the administration of John Adams, on whom he made a gross attack in a newspaper. Under the alien and sedition laws, he was tried for libel, convicted, and sentenced to a fine and six months' imprisonment. As soon as the democratic party came into power, he was rewarded by the appointment of judge, but he soon became so odious to the party that he was removed. In later years, he was professor of chemistry in Dickinson college, in Pennsylvania university, and South Carolina college in Columbia, of which he became president. His latest work was a revision of the statutes of South Carolina. Among his publications are *Information Concerning America*; *An English Version of the Institutes of Justinian*; *Lectures on the Elements of Political Economy*, etc.

COOPER, THOMAS SIDNEY, b. 1803; an English painter, who began as scene-painter in a theater at the age of 17. After much work and travel, he married and settled in Brussels, where his talents, especially in painting animals, were appreciated. The revolution involved him in trouble, and he returned to England, where he has enjoyed complete success.

CO-OPERATION (*ante*), as a system of united effort for commercial or industrial purposes, has been introduced and is spreading among the working classes of this country.

1. They co-operate in providing homes for themselves. Building-lean associations have existed in Philadelphia about 30 years. The members subscribe for a given number of shares and pay one dollar on each share every month for a term of years, until the sums paid and the interest on them amount to \$200—the full value of the shares. This usually requires about 10 years. The money thus provided is loaned to the highest bidder. Each shareholder who builds or buys a house can, in order to help pay for it, borrow a part of the accumulated fund equal to the full value of his shares, paying the stipulated interest on it monthly, and giving, as security, a mortgage on the house. When his shares attain their full value, he has enough to pay the principal of the debt and cancel the mortgage. There are in Philadelphia more than 500 of these associations, with an ultimate capital of 100 millions of dollars. They have given homes to 60,000 workmen, and now hold 80,000 mortgages, which are being paid off by monthly installments. Similar associations have been formed in Boston, where they are growing rapidly in usefulness, popularity, and strength, and in nine other cities of Massachusetts. They are flourishing also in various other parts of the United States. Their advocates claim for them many decided advantages. (1) They enable workmen to have the benefit of their earnings in advance, by building houses and paying for them in monthly installments. (2) The monthly payments on mortgages are more easily met. (3) They instruct the industrial classes in the management of property. (4) They yield a larger interest than could otherwise be profitably paid. (5) They do not require payment of the principal until the shares are complete.

2. A co-operative store was started in Boston, April, 1879. Fifteen hundred shares were subscribed for at \$4 each. The inducements offered by the system and the advantages resulting from it, are: goods of the best quality only are sold, and at market prices; full weight and measure are guaranteed; civility from store-keepers and salesmen is assured; no losses from bad debts are incurred; and an equitable share of the profits is enjoyed by all who have any pecuniary interest in the store. The by-laws provide that a quarterly adjustment of interest and profits shall be made, when, if the profits are sufficient, all the shares shall be credited with interest at the rate of 6 per cent. After that has been done, if there have been a net profit the contingent fund is to be credited with the percentage required by law, and the balance distributed among the purchasers. Every one making a purchase, however small, receives a check showing the amount, a duplicate of which is kept by the store. At the end of the quarter he receives a dividend of the profits in cash in proportion to the aggregate amount of his checks; the rate to those who do not own shares being half that of those who do. At the end of the first quarter, the profits were sufficient to pay 6 per cent on the stock, 4 per cent on all purchases made by shareholders, and 2 per cent to other buyers. At the end of the second quarter, the dividend was 6 per cent on stock and 6 on purchases. The number of shareholders is now 650. The capital is limited to \$100,000. To enable the poorest to become stockholders, any person by paying fifty cents can have his dividends on purchases placed to his credit, and when they amount to \$4, a share will be issued to him. New shares also can be obtained by allowing dividends to remain. These

associations are specially adapted to large manufacturing districts, and the interest in them among workmen and philanthropists is spreading widely.

COOPER RIVER, a stream in South Carolina, rising in Charleston co., flowing s.e. and uniting with the Ashley below the city of Charleston. It is navigable for 30 m. to a canal connecting with the Santee.

COOPERSTOWN, a village and seat of justice of Otsego co., N. Y., 60 m. w. of Albany, at the outlet of Otsego lake; reached by the Cooperstown and Susquehanna Valley railroad; pop. 2,300. It is in a fine and picturesque situation. The American novelist, James Fenimore Cooper, had his residence here, as did his father, after whom the village is named.

COÖS, a co. forming the n. portion of New Hampshire, bordering on Maine and Canada, and separated from Vermont by the Connecticut river, intersected by the Androscoggin river, and traversed by the Grand Trunk railroad of Canada, and the White Mountain railroad; 1950 sq.m.: pop. '70, 14,932. The surface is hilly and the climate cold. The chief productions are oats, potatoes, butter, wool, and maple sugar. Co. seat, Lancaster.

COÖS, a co. in s.w. Oregon, on the Pacific ocean, watered by the Coös and the Coquilla rivers, and bordered on the e. by the Umpqua mountains; 1500 sq.m.; pop. '70, 1644. Productions chiefly agricultural. Gold, copper, and iron have been found. Co. seat, Empire City.

COOSA, a co. in central Alabama, watered by the Coosa and Hatchet rivers; 600 sq.m.; pop. '70, 11,945—3,394 colored. The surface is hilly, but the soil is productive, yielding corn, cotton, etc. Co. seat, Rockford.

COOSA RIVER, rising in n.w. Georgia, and flowing through n.e. Alabama until it joins the Tallapoosa, the two forming the Alabama. The Coosa is about 350 m. long, and navigable in some parts.

COÖS BAY, a seaport on the Pacific in s. Oregon, at the mouth of Coös river. The entrance is n.e. of cape Arago over a bar with 14 ft. of water at high tide. Great quantities of lignitic coal are found around the shores of the bay.

COPE, CHARLES WEST, b. 1811; an English painter, the son of an artist. His first work exhibited was "The Holy Family," in 1831, since which time he has produced a great number of pieces. Among them are: "Hagar and Ishmael," "The Cronies," "Paolo and Francesca," "Flemish Mother," "Almsgiving," "The School-master," "The Cotter's Saturday Night," "Trial by Jury" (his first cartoon), "Meeting of Jacob and Rachel," and dozens of others. Among some of the latest are: "Taming the Shrew," "Anne Page and Slender," "Home Attractions," "Spring Time," "Bianca's Lovers." "Hope Deferred," and "Cameron's Welcome Home from the Explorations in Africa." He was one of the original members of the Etching club, and is one of the trustees of the royal academy.

COPE, EDWARD DRINKER, b. Philadelphia, 1840; naturalist and comparative anatomist, frequent contributor to scientific publications, writing on the herpetology of tropical regions, ichthyology of the United States, reptilia of several explorations, cetacea of the North American coast, extinct cetacea of the United States, etc. He has also published papers on *The Hypothesis of Evolution, Physical and Metaphysical; On the Method of Creation, or the Law of Organic Development; Extinct Vertebrates of the Eocene of Wyoming and Nevada; New Vertebrata from the Tertiary of Colorado.*

COPE, THOMAS PYM, 1768-1854; b. Penn.; a distinguished merchant in Philadelphia who started the first line of sailing vessels between that city and Liverpool. He was largely instrumental in introducing the Schuylkill water to Philadelphia.

COPIAH, a co. in s.w. Mississippi, bounded on the e. by Pearl river, and intersected by the New Orleans, Jackson, and Great Northern railroad; 960 sq.m.; pop. '70, 20,608—10,370 colored. It is an agricultural region. Co. seat, Gallatin.

COPPÉE, HENRY, LL.D., b. Ga., 1821; graduated at West Point in 1845; served in the Mexican war, and as assistant professor at the military academy. In 1855, he was professor of English literature and history in the university of Pennsylvania. He has published *Elements of Logic; Rhetoric; and Grant and his Campaigns*; besides editing a number of eclectic compilations.

COPPER (*ante*). The principal deposits of copper in the United States are on the s. shore of lake Superior, where the metal occurs in mass among conglomerates and sandstones. It is almost wholly in the metallic or native state, running in veins across the strata, associated with spars and crystalline minerals. It is also abundant in beds of rock, and in such places the richest mines are found. In the beds generally the metal is found in small lumps or grains, but masses of pure copper of the weight of many tons have been found. In 1872, a single mine in this region yielded 8,000 tons of pure copper, or nearly one tenth of the production of the whole world. There is evidence that mines in this region were worked long before the arrival of the modern Europeans on this continent. The operations now going on were begun about 1845, and have

increased largely from year to year. There are less important mines in Tennessee, Connecticut, New Jersey, Pennsylvania, and North Carolina.

COPPERHEAD, a serpent of the rattlesnake family, exceedingly poisonous. It grows to about a yard in length, is of light copper-color, with transverse bars, and is without rattles. Its bite is dangerous and often fatal. It is called "deaf adder" and "chunk-head."

COPPER-SMELTING. I. The dry process.—The ores are sorted according as they contain much or little sulphur, and are mixed by the smelter to produce a mass, (1) that will contain 9 to 14 per cent of copper; (2) that after calcining will melt easily without flux; (3) that when fused will yield a mass containing about 30 per cent of copper; (4) that shall be free from impurities which would cause a low grade of copper. Three or four tons of this mixture are spread about 8 in. thick on the floor of a reverberating furnace. The fire is at first low; as the mass reddens the heat is increased, and the ore is stirred to expose all equally to the flame. The process lasts from 12 to 24 hours, depending on the quantity of silica and sulphur present. The sulphur is burned or volatilized, and the iron and sulphur pyrites are partly changed to oxides. After the calcined ore is removed from the furnace, water is added to assist oxidation, and the mass is stored for fusing. For this process, the calcined ore, with slag and broken bricks from old furnace hearths, is spread upon a reverberating hearth, the furnace is sealed with clay to exclude the air, and the heat is made intense for about 5 hours. The workman removes the slag which floats on the melted mass, and a second charge is usually added, melted, and skimmed; then the metal is run off into a pit of water, where it is granulated, or into molds, and afterwards crushed by machinery.

The processes of calcining and fusing are repeated, the first with moderate heat to consume the sulphur and oxidize the iron; the second with intense heat to remove the oxide of iron with silica in a slag, while the proportion of copper constantly increases. When the iron is mostly removed and the proportion of sulphur is much reduced, the metal is roasted in a current of air for about 24 hours, the mass being kept in a semi-fluid state. The product is a sulphide of copper, Cu_2S , which is at once submitted to another roasting for 24 hours, the product being nearly pure copper, which a subsequent refining fits for the market. The steps of reduction may be understood from the following table:

SUCCESSIVE ANALYSES IN REDUCTION OF COPPER.

PROCESS.	COMPOSITION OF PRODUCT.						COMPOSITION OF SLAG.			
	Cop- per.	Iron.	Ox. of Iron.	Sul- phur.	Silica, etc.	Total.	Silica.	Ox. of Iron.	Ox. of Cop- per.	Alu- mina, Lime, etc.
Selected ore.....	12.3	32.7	.....	31.	24.	100				
1. Calcination.....	12.2	22.7	18.5	16.2	30.4	100				
2. Fusion.....	33.7	33.6	.....	29.2	.....	96.5	60.5	28.5		11.
3. Calcination.....	33.	38.	.....	13.	16.	100				
4. Fusion.....	58.8	12.6	.....	20.5	8.1	100	45.	53.	2.	
5. Roasting.....	93.4	.7	.....	.....	.9	100				

II. The wet process.—The ores are first burned to drive off part of the sulphur, which is utilized in the manufacture of sulphuric acid; about 30 per cent of the weight is removed. The remainder is mixed with about 15 per cent of common salt, and the whole is finely ground between heavy iron rolls. A portion of unburned, or over-burned, pyrites is usually added to bring the proportion of sulphur in the mass to the proper standard. The mass is then calcined, the sulphur is oxidized, sodic sulphate is formed, while the chlorine of the salt unites with the copper to form cupric chloride; the hydrochloric acid and other gases evolved are condensed in tall chimneys as "tower water," which is saved for use in the next stage of the process. The calcined ore is washed in tight wooden tanks, with hot water, "tower water," and dilute hydrochloric acid, until all soluble copper is extracted. The solution is conducted into other tanks of wood, containing heaps of old malleable iron, by which the metallic copper is precipitated in a finely divided condition. When a steel blade, thrust into the liquid, is no longer reddened, the process is ended; the tanks are drained, and the copper is separated from the iron by washing with water. This precipitate contains about 80 per cent of copper, which is further purified, as in the dry way. The liquid which contains the copper carries also the lead, silver, or gold which may have been associated with the copper in the ore, and these metals may all be profitably separated. About 14,000 tons of copper are produced annually by this process in Great Britain, out of a total annual product in the world estimated at from 126,000 to 130,000 tons.

COPTOS, the modern Kibt or Koft, a t. in Egypt, near the right bank of the Nile, 25 m. n.e. of Thebes. It is a place of great antiquity, but its ruins belong to a comparatively late period. After the foundation of the port of Berenice on the Red sea, 266 B.C., its position on the caravan line raised Coptos to great importance; but in 292 A.D.,

in consequence of joining in rebellion against Diocletian, it was almost destroyed. During a part of the 7th c. it was called Justinianapolis, in honor of the emperor Justinian.

COPYING-MACHINES (*ante*). 1. *The Electric Pen*, invented by Thomas A. Edison. This is a metallic tube or style within which vibrates longitudinally a steel wire, pointed and protruding slightly at the lower end. The vibration is caused by an engine carried at the top of the style. Several motive powers are applicable, as compressed air, water, force communicated from other machinery, etc.; but as the most convenient and portable, Mr. Edison chose an electro-magnetic engine, actuated by a current brought from a small battery which stands on the table by the side of the writer. The engine having been started, and the wire vibrating at a rapid rate, the style is held vertically over the paper, and the point is moved upon the sheet as in the act of writing. The needle punctures a series of holes in the path over which the pen is carried, and the paper becomes a stencil, in which the writing readily appears when the sheet is held up to the light. This stencil is then laid upon a sheet of plain paper, in a frame which binds the two together; an inked roller is passed over it, and the ink pressed through the holes in the stencil appears upon the clean sheet in a series of minute dots in the line of the writing. With careful use a stencil will furnish 500 or more copies. After some copies have been taken, the stencil may be dried and kept for use again.

2. *The Papyrograph*. The patentee furnishes a specially prepared paper, upon which words are written with a common pen, but with a special ink. The sheet is then soaked in water, and the ink corrodes the fabric of the wet paper, leaving open lines in place of the writing. The sheet is then used as a stencil, like that prepared by the electric pen.

3. *The Gelatine Pad*. A simple, cheap, and effective copier may be prepared thus: Procure a shallow tin pan, one half an inch deep, and a little larger than a common cap or letter sheet. Soften 3 oz. of gelatine, white glue, or even common glue, by soaking in cold water, and remove all the unabsorbed water. Boil for 1 hour in 10 oz. of glycerine, over a salt-water bath, and pour into the pan; when cold it is ready for use. In warm weather a larger proportion of glue is desirable. A special ink is necessary. Boil 1 oz. of violet aniline in 7 oz. of water; when cold, add 1 oz. of alcohol, $\frac{1}{2}$ oz. of ether, $\frac{1}{4}$ oz. of glycerine, and 2 or 3 drops of weak carbolic acid. If this ink dries too quickly in the pen, add a few drops of alcohol. A good ink is made by dissolving 2 oz. of citric acid in 6 oz. of water, to which add 1 oz. of violet aniline. The writing to be copied is laid face downward upon the pad, and lifted again after a moment's delay, when a copy appears in reverse upon the jelly. A clean sheet laid upon this negative and instantly removed, shows a fac-simile of the original. Success depends much upon the quality and consistency of the ink. Ink made with black aniline will give about ten copies; with green, 30; with red, 60; and with violet aniline 100 to 125 fair copies have been taken. As soon as the copying is finished, the pad should be washed, using a soft sponge and clear water, warm preferred. The action of the pad is thus explained: The glue does not unite with the glycerine, but forms a spongy mass whose minute pores are occupied with the fluid. The aniline ink is absorbed by the glycerine and given up successively to the sheets of paper, as they are laid down. Repeated washings wear away the pad. If its surface becomes injured it may be remelted, and more material added, at pleasure. Pads of this nature, made from various recipes, are sold under different names, but the materials and methods of use are substantially as described.

4. *The Blue Process* is peculiarly adapted to the reproduction of drawings, and is useful to architects, engineers, and artificers. Two solutions are prepared: the first contains one part of citrate of iron in four parts of pure water; the second contains one part of red prussiate of potash in six parts of water. When ready for use, equal parts of the solutions may be mixed in a shallow dish, and applied to sheets of paper with a sponge or a camel's hair pencil. Any paper will serve, but that is best which has but little sizing. The solution should be applied, and the paper should be dried and kept in the dark. The solutions themselves will keep, separately, in the dark as long as desired, but if mixed soon begin to deteriorate. The drawing or writing to be copied should be made with very black ink, upon paper or tracing cloth. A photographer's glazed frame, having a back easily removed, is useful for copying. Place the drawing face down upon the glass; the prepared paper with its face against the back of the drawing; put the movable back in place, reverse the frame, and expose to light. In direct sunshine, 2 to 7 minutes will be long enough, the time to be ascertained by trial; in diffused light, the exposure must be 5 to 10 times as long. After exposure the print should be immediately washed in a tub of clear water; when the chemicals are removed, the sheet is fastened by its corners to a line to dry, and the surface may be afterward finished by a hot iron, or by pressure. A little practice may be needed to secure the best results, in which the lines will be clear white, and the background a deep blue. A light blue background indicates a weak solution, or insufficient exposure; over-exposure is shown by a grayish tint. Clear, quick sunshine will give sharper lines than can be obtained by slow diffused light. The chemical change is evident; the light causes a reaction between the prussiate of potash and the iron, of which Prussian blue is the product; this occurs

wherever the light has not been intercepted by the black lines of the drawing, which therefore appear in white upon an intensely blue and unfading background. Copies may be multiplied at will from negatives in collodion on glass, from engravings in books, from drawings, or from manuscript.

CORAM, THOMAS, 1668-1751; an English philanthropist who began life as a seaman and rose to be a merchant captain. He settled in Taunton, Mass., where he was for several years engaged in farming and boating. In 1703, he returned to England, where, after long exertion and waiting, he established a hospital for foundlings, opened in Holton Garden, Oct. 17, 1740, with 20 inmates. Coram was also one of the promoters of English settlement in Georgia and Nova Scotia; but the hospital and other charities took the most of his attention, and on them he spent all his estate, so that in his old age an annuity was settled upon him by private subscription.

CORAY, ADAMANTIOS, 1748-1833; a Greek scholar, the son of a merchant of Smyrna. He studied medicine in France, and being poor was obliged to support himself by translating English and German works into French. In Paris, in 1788, he published a number of political tracts looking towards the liberation of his countrymen from Turkish control. Napoleon employed him to translate Strabo, and gave him a pension. The most celebrated of his works are the editions of the *Ethics* and *Politics* of Aristotle.

CORBAN, a gift or oblation to God, on pretense of which a person might reserve from sons or parents the use of property. Property so dedicated went into the keeping of the Pharisees of the Jewish temple. They held that no matter how rashly such a dedication was made, the act released the person from any duty to aid another with what he had so devoted.

CORBAUX, FANNY, b. 1812; an English painter and scholar. The failure of her father reduced her to poverty when but a child. She determined to make her way as a painter, and although her own instructor, she soon achieved a good position, excelling in portrait-painting particularly. She also became an excellent Biblical scholar, and wrote a series of letters on the *Physical Geography of the Exodus*.

CORBEIL, a t. in France at the head of an arrondissement in the department of Seine-et-Oise, at the junction of the Essonne with the Seine, 18 m. s.e. of Paris; pop. '72, 6,016. From the 10th to the 12th c. it was the chief town of a powerful countship. It was besieged by the duke of Burgundy in 1418, by the Huguenots in 1562, and by Alexander Farnese in 1590. The church of St. Spire was rebuilt in the 15th c.; St. Jean-en-l'Isle belonged to the templars, and dates from the 13th century. In the modern town there are more than 40 flour-mills, and many printworks cotton factories, etc.

CORBOULD, EDWARD HENRY, b. 1815; son of Henry, and also an artist. At an early age he painted "The Fall of Phaeton from the Chariot of the Sun," for which he received a gold medal from the society of arts. Since that period he has produced a great number of large pictures. In 1851, he was appointed instructor of historical painting to the royal family. He paints exclusively in water-colors, and excels in pageants and chivalric subjects.

CORBOULD, HENRY, 1787-1844; an English artist and one of the most accomplished draughtsmen of his time. He devoted a great part of his life to drawing from ancient marbles in the British museum and in various private collections.

CORCYRA. See CORFU, *ante*.

CORDERIUS, or CORDIER, MATHURIN, 1478-1564; a native of Normandy; author of the *Colloquia*. He was especially fond of teaching children, and taught at Paris, where John Calvin was one of his scholars. He subsequently taught at Geneva. He wrote a number of books for children, one of them (the *Colloquia*) passing through almost innumerable editions, being used in schools for three centuries after his time.

CORDILLERAS OF CENTRAL AMERICA (*ante*). This section of the great mountain chain which stretches, almost without a break, from the Arctic ocean to the extreme s. point of South America, is confined to the isthmus of Panama and the small states of Central America. In Mexico, the United States, and British America, the main chain is called the Rocky mountains, and the long unbroken line skirting the Pacific coast of South America is known as the Andes. The Cordilleras present their lowest elevation in the Panama isthmus, where the summit level (of the Panama railroad) is less than 300 ft.; and there, too, the breadth of the range is least, varying from about 30 to 70 miles. At another point, there is said to be a pass which is only 150 ft. above tide. In recent years all this region has been explored with a view to the construction of a ship canal from the Atlantic to the Pacific, and recently (Mar., 1880) the project has received new impetus from the presence in America of M. de Lesseps, the father of the Suez canal. The great obstacles to isthmus exploration are the extreme unhealthfulness of the climate, the continuous fall of rain, and the impenetrability of the tropical vegetation. Towards the Pacific, the slope of the mountains is abrupt and steep; towards the Atlantic it is more gradual. On what is known as the Nicaragua route, in the state of that name, the San Juan river finds its way through the e. branch of it.

mountains to Nicaragua lake, and that lake reaches within 12 m. of the Pacific; but on that narrow strip there runs a belt of the Cordilleras quite too formidable for canal engineering. Extinct and active volcanoes are common in these mountains, more especially in the e. range. Between these e. and w. ranges is a central basin about 300 by 150 m., comprising nearly the whole of the state of Nicaragua, and embracing much grand and beautiful scenery. From the waters, and near the shores of lake Nicaragua, rise enormous volcanoes, their sides rent with fissures and black with lava. Smoke and flame come from some of these volcanoes, but lava is seldom seen. The Cordilleras exhibit about the same scenery in the states of Honduras, San Salvador, and Guatemala. There are five volcanoes in San Salvador, and six in Guatemala; one of the latter, 14,000 ft. high, throws up water only. Silver and copper ores are found, and there is great abundance of red cedar, rosewood, mahogany, india rubber, boxwood, vanilla, cochineal, etc. The temperature in the interior is seldom excessive. Going towards Mexico, the height of the ranges decreases, and at the isthmus of Tehuantepec the highest pass between the oceans is in one place only 700 feet. Further north, the mountains spread out and form the great tableland of Mexico, with here and there isolated summits, some of which are actively volcanic, and many of which rise to very great heights.

CORDON BLEU; knights of the ancient order (in France) of the Saint Esprit, or Holy Ghost, were so called because the jewel of the order was suspended on a blue ribbon. In late times, the term was degraded to mean a first-rate cook. The "cordon grand" is any member of the legion of honor, their decorations being suspended by a broad (or grand) ribbon.

CORDOVA, a province in s. Spain on both sides of the Guadalquivir, intersected by railroads that connect with the ports of Cadiz and Malaga, and the railroad system northward; 4,159 sq.m.; pop. '70, 382,052. The land is fairly productive, and wine, oil, hemp, flax, honey, etc., are the products. Excellent horses and mules are raised, and there are mines of silver, copper, iron, lead, and coal. The chief town is the ancient city of Cordova.

CORDOVA, FERNANDO FERNANDEZ DE, b. 1792; a Spanish commander who began military service in 1810, serving in the wars against Napoleon. In 1841, he was implicated with Concha in the conspiracy against Espartero; in 1847, he was minister of war, and afterwards inspector-gen. of infantry. In 1850, he was capt.gen. of Cuba. In 1853, he was made gen.-in-chief of cavalry. He attempted to support Isabella in the outbreak of 1854, but when the revolution became successful he fled to France. He returned a few years later, and in 1864, Narvaez made him minister of war. In 1868, in common with most of the Spanish grandes, he took part in the Prim revolution against Isabella. In 1870, he was again appointed capt.gen. of Cuba, and in 1871 he was made minister of state *ad interim* at Madrid.

COREA (*ante*), native name **CHO SEN** (Morning Calm). The name Corea comes from that of the ancient province Koria or Kokorai. The French call it Corée. It was first colonized by Kishi (Chinese, Ki Tsze), a Chinese courtier and reputed author of part of the Shu-King, the classic edited later by Confucius. Kishi introduced the elements of the civilization of ancient China into the peninsula, which he named Cho-sen. The early history of Corea is known through the Chinese and Japanese annals, the latter being very full, while many works on Corea exist in Japan. The ancient boundaries of Corea far exceeded their present limits. From a little before the Christian era, until the 10th c., the peninsula was divided into the three kingdoms of Shinra (or Shiraki), Korai (or Koma), and Hiaksai (or Kudara); or in Chinese, Sinlo, Kaoli, and Petsi. Though civil war was almost constant between the three states, with occasional wars with or invasions from China, and much help or conquest from Japan, yet in spite of war, the arts flourished, and it was through Corea, and not from China directly, that Japan received those elements of her civilization which are of Chinese origin. Corea sent to Japan many scholars, artists, and men of skill in every trade and profession, and the basis of nearly every order of arts or handicrafts in Japan is Corean. The most noted ancient invasion of the Japanese is that of the empress, Jingu Kogu, in the 3d century. Fusan (q.v.), on the e. coast, has been held by the Japanese from very ancient times. In the 10th c., Shinra obtained supremacy in the peninsula, and united Corea was then named Kori (Jap. Korai). In 1231 A.D., the Mongols invaded Corea, and in 1256, reduced it to vassalage, after a bloody resistance, the Corean king going in person to the court of the conqueror of continents to do homage. Anxious to humble Japan, Khublai Khan made Corea his base of operations for his expedition in 1273 which failed, and in 1281 for his mighty armada of 3,500 war junks, and 180,000 Tartars, Coreans, and Chinese. Of his vast fleet and host, few escaped the storm and the arrows of the Japanese. The Korai dynasty came to an end in the 14th c., the Corean king refusing or neglecting to pay tribute to the Ming emperors of China. A Chinese army was sent against Corea, and the Corean gen. Seikei dethroned the king, and, being made sovereign by the army, made offers of homage to the Chinese emperor, and received investiture as Cho-sen-o (king of Cho-sen), the ancient name of the country having been restored. This was in 1392. The dynasty thus established, rules Corea to-day. In 1582, Hideyoshi (Taiko Sama) having unified all Japan, resolved on the invasion of China through Corea, and sent word to the latter to resume in full form her ancient relation as tributary vassal. Coreu

having insultingly refused, Hideyoshi dispatched an army of 160,000 Japanese veterans, under command of his generals Konishi and Kato, to invade Corea. So well organized and equipped was the advance detachment, that within three weeks after their landing at Fusan, they had reduced the castles along the line of march and were in the Seoul, or capital (see SEOUL). Pushing northward to Ping Yang, this city was occupied, and the army of Konishi was reinforced by the other corps which had overrun the seven other provinces of the peninsula. A Chinese army of 40,000 men now entered Corea, the first battle between the allies and invaders being fought at Ping Yang (q.v.). Falling back on Seoul, the Japanese fortified it, but massing their forces, left their intrenchments and gave battle to the allies. In the hard-fought battle which ensued, ten thousand men were said to have fallen. Diplomacy at Peking and Kioto, and in Corea, checked hostilities for a time; but the war was renewed with fresh vigor. Several severe naval battles on a large scale were fought; on land the castle of Nangan, one of the strongest fortresses in the kingdom, was taken by the Japanese, the Chinese commander slain, and 3,726 heads of Chinamen and Coreans were cut off and made into a trophy. The final pivot of the war was at Urusan castle, a few miles n. of Fusan. During the siege, which lasted one year, the large Japanese garrison was reduced by the straits of hunger to eat human flesh. Being relieved, a great pitched battle fought near the castle resulted in bloody defeat of the Chinese and Coreans. The death of Hideyoshi occurring soon after, the Japanese armies were withdrawn, and peace was made on the basis of Corea's tributary vassalage to Japan. In 1636, the Manchu Tartars invaded Corea, the king receiving investiture from the Manchu, who soon afterwards entered China, and established the present dynasty on the throne of China. Under every form of national government, and of foreign conquest, Corea has remained tributary to China, and until 1876 to Japan, her geographical position unfortunately rendering her vulnerable to every invasion from e. or w., and making her like grist between two great rival nations as millstones. No seeds of Christianity were left by the Japanese army, though Konishi's division was largely composed of converts of the Jesuit missionaries in Japan; nor by the crew of the Dutch ship *Sparveer* shipwrecked off Quelpaert island in 1653, and detained as prisoners in Corea until 1667, when they escaped, Hamel, the supercargo, writing an account of their adventures. Christianity began in 1777. Piek-i, a young Corean scholar in a coterie of learned men, having found some books on Christian doctrines, composed in Chinese by the Jesuits at Peking, brought into Corea by a member of the embassy, began the practice of the Christian life, and the propagation of the new ideas. The native Christians increasing, ignorantly formed a hierarchy among themselves, but abandoned it as greater knowledge showed them their error. In 1794, the first Chinese priest, and in 1836, the first European missionary, M. Manbant, had penetrated Corea. Persecution marked the history of the church from the very first, but with intervals of quiet. Down to 1866, after twenty years of uninterrupted labor, and eighty years of Corean Christianity, four bishops and nineteen priests, all except four being Frenchmen, had entered Corea. Of these, fourteen suffered death at the hands of the government, and four died of toil or disease. Nine having been put to death at once, in 1866, the French admiral, Roze, with seven ships and 1000 men, captured Kang Hoa city (q.v.), but suffered repulse while attacking a fortified monastery, and the badly-planned expedition failed. In Aug., 1866, the American schooner *General Sherman*, with a cargo of cotton goods, glass, tin plate, etc., and heavily armed, left Chifu, China, on a trading or semi-piratical expedition to Corea. She had on board 19 Malay and Chinese sailors, and five foreigners, viz., Mr. Wm. B. Preston, owner, and the captain and mate, Americans; Mr. Hogarth, supercargo, and the Rev. Mr. Thomas, Englishman. The latter, though warned of the character of the cruise, went on board as interpreter and to improve his knowledge of the Corean language. Arriving in Ping Yang river, they made their way up to the city. What further befell them is not fully known, but the Coreans most probably mistaking the foreigners for their late enemies, Frenchmen, and being provoked into a quarrel, attacked and killed them all. To obtain redress, the U. S. S. *Wachusett*, com. R. W. Shufeldt, and the U. S. S. *Shenandoah*, com. J. C. Febiger, were dispatched in 1867 to the w. coast of Corea, but no satisfaction being obtained, the United States government determined on sending an expedition to the Corean capital. The American fleet under commodore John Rodgers sailed from Nagasaki, Japan, May 16, 1870, reaching the French anchorage off Kang Hoa on the 23d. The fleet consisted of the *Colorado*, *Alaska*, *Bencicia*, *Monocacy*, and *Palos*, the force numbering about 1000 men, and having on board F. F. Low, U. S. minister to China, who was, if possible, to make a treaty with Corea. Negotiations were soon opened; but with unseemly haste, and without right or warrant, four armed steam launches acting as "surveying boats" were sent up the Hang river, together with the *Monocacy* and *Palos*. The Coreans, resenting this armed invasion of their territory, fired on the Americans, who returned the fire with their heavy guns. June 10, a further expedition of 2 gunboats, the 4 steam-launches, and 759 men, were sent up the river to capture all the forts. Within 48 hours, the landing force and the gunboats co-operating, five forts were captured and dismantled, 50 flags and 481 pieces of artillery were taken, and probably 400 Coreans slain; the American loss being less than 15 wounded and 3 killed, among the latter the gallant lieut. McKee. The Corean government refusing to open negotiations, the American commodore discharged his prison

ers and returned to Shanghai, China. Though England, Russia, France, Germany, and the United States had failed to open Corea, the Japanese, after far greater preparations and equipments, resolved to succeed or go to war. The immediate cause of their action, was the firing by a Corean fort upon one of their gun-boats, the *Unyo Kan*, Sept. 19, 1875. The Japanese having landed for water, and being in uniform similar to that of American sailors, were probably mistaken by the Coreans for the latter, the place being the scene of the fight with the Americans in 1871. The mikado sent Arinori Mori (see MORI, A.) to Pekin to obtain from China a declaration of neutrality. Receiving from the Chinese a written disclaimer of all authority over Corea, the Japanese government dispatched a fleet and force to Corea, under gen. Kuroda, intrusting the diplomatic action to Inouye (q.v.). Imitating, even to minutest details, the policy and example of the American commodore Perry in dealing with Japan in 1854, Kuroda and Inouye gained a like "brain-victory," and a treaty of amity and commerce was signed Feb. 27, 1876. Under the provisions of this treaty, a Corean embassy visited Tokio in 1877, and the port of Gensan (q.v.) with Fusan was opened to Japanese residence and trade. In addition to the few Coreans residing in Japan and China, 5,000 live in Russian Manchuria, chiefly in settlements along the Tumen river, where they are instructed by Russian teachers and missionaries. It is now proved by linguists that the Corean and Japanese languages have a very close affinity, the Corean being probably the parent stock. See *A Comparative Study of the Japanese and Korean Languages*, by W. G. Aston, in journal of the royal Asiatic society of Great Britain, Aug., 1879. Education in Corea is based on the Chinese classics. For the best map of Corea see in Dallet, and that published by the Japanese war department, size 5 ft. by 4. See Kiaproth, *San Kof Tsou Ran To Sets*; Basil Hall's *A Voyage to the West Coast of Corea*; *The Corean Martyrs*; Grinnel's journey, American Geographical Society's journal, 1870-71; Dallet's *Histoire de L'Elise de Corée*, *Corean Primer*, and W. E. Griffis's *Corea*, soon to be issued.

COREOPSIS, a herbaceous plant of the order compositæ, popularly known as tick-seed, the fruit being in the shape of a small bug. It is sometimes raised in gardens for the sake of its flowers, which are yellow with a purple center.

CORINTH, a village in Alcorn co., Miss., near the Tennessee border; pop. '70, 1512-679 colored. During the war of the rebellion, this was a place of much importance and was early occupied by the confederates. After the battle of Shiloh, Beauregard retreated to Corinth, followed by the unionists under Halleck. After some time spent in what went by the name of "the siege of Corinth," the confederates retreated and Corinth was occupied by the union forces. Oct. 3, 1863, the confederates undertook to recapture the place; but on the 4th they were signally defeated in an attempt to carry it by assault, were routed, and fled in disorder. The union loss was 315 killed, 1812 wounded, and 232 prisoners; that of the confederates, 1423 found dead on the field, probably 5,000 wounded, and 2,248 prisoners.

CORINTHIANS, EPISTLES TO THE (*ante*). From a passage in what is now named the first epistle—"I wrote to you in the epistle"—many have inferred that an earlier letter had been sent by the apostle to the church of Corinth. The weight of evidence, however, is against that opinion. The genuineness of the first epistle has never been doubted, and it is attested by the earliest and most abundant proof. The most probable date assigned to it is A.D. 54. It was occasioned by the divisions, immoralities, and disorders which, the apostle had heard, were existing in the church; and by the request of the church for instruction and advice. The epistle, therefore, naturally consists of two parts: the first applying remedies, and the second answering questions.

In the first part, the apostle expresses pleasure and thankfulness, in view of the abundant spiritual gifts which the Corinthian Christians had received. (1.) He then proceeds to rebuke their divisions, and to give the reasons why they and all Christians should be united in Christ and among themselves. (2.) He condemns sharply the immorality which some of them practiced, and the indifference to it which many of them showed. Both the crime and the insensibility to its guilt had their origin in the corruption universal among the Gentiles, and so developed at Corinth that "to Corinthianize" was a synonym for licentiousness, and that all who had any remnant of prudence or of shame felt that Corinth was no place for them. Hence it followed that even true converts began their new life in an atmosphere of which we can have only the faintest idea, now that the Gospel has been waging war against corruption for 1800 years.

In the second part, the questions submitted by the church are answered. They had reference (1) to marriage and celibacy; (2) to the lawfulness of eating meats sacrificed to idols; (3) to the decorum of manner proper for both men and women in religious assemblies; (4) to the impropriety in their observance of the Lord's supper, which, like the immorality already spoken of, was the effect of their birth and training amidst the disgraceful practices of idolatrous festivity; (5) to unbelief in the resurrection of the dead; and (6) to the estimate in which spiritual gifts should be held. On all these points, principles are announced and arguments enforced which, while meeting the difficulties and errors then prevalent, have also a general application. At the close of the epistle, directions are given for contributions, and salutations are sent to the members of the church.

The genuineness of the second epistle has been as generally admitted as that of the

first, and it is equally well attested by both external and internal proofs. It was written soon after the first, as a sequel to it, and probably from Philippi. Having been informed by Titus of the effects produced by his reproofs and instructions, Paul was comforted and encouraged, yet saw that the reformation had been only partial. Many of the Corinthians had amended their lives: many were deeply penitent; a grievously offending member of the church had been expelled, and renewed respect for the apostle had been shown. Some, however, still under the influence of false teachers, denied the divine authority of the apostle's ministry, and endeavored to turn his letter against himself. They charged him with vacillation of purpose, with severity, with vainglory, and even urged against him personal infirmity as an offset to official power. The second epistle was written to meet these circumstances of the church. In it the apostle (1) answers the charge of vacillation, affirming that his delay in visiting them had been caused by the persecution to which he had been subjected, and by his desire to afford them longer time for perfecting the reformation which they had begun. (2) He assures them that, so far from having been tyrannical or severe in his discipline, he earnestly desired the welfare both of the church and of the particular offender, and that as the good effect of the sentence of excommunication had been manifested, he hoped that it would no longer be enforced. (3) He ascribes the great success of his ministry altogether to the power and grace of God. He acknowledges his own personal unworthiness and weakness, but appeals confidently to the abundant testimony which God had given to his work in preaching the gospel and establishing the church. Nowhere had this divine support been more triumphantly displayed than among the Corinthians themselves; and it would continue to be given, however contumacious any of them might be. (4) He renews his affectionate exhortations to a holy and beneficent life.

CORIPPUS, FLAVIUS CRESCONIUS, a native of Africa, supposed to have lived in the 6th c.; author of a panegyric on Justin the younger, Byzantine emperor from 565 to 578 A.D. Corippus was also the author of *Johannis*, a poem celebrating the exploits of a proconsul of that name in Africa in Justinian's time.

CORMONTAIGNE, LOUIS DE, 1696-1752; a French military engineer who took part in some of the most important sieges in the Polish and Austrian wars. He had charge of the line of fortification from Calais to the Rhone, and he built new defenses at Strasburg, Metz, and Thionville.

CORNA'RO, CATERINA, 1454-1510; a queen of Cyprus. She succeeded her husband, who had acted as regent until 1473. After a troubled reign of 16 years, she abdicated in favor of the Venetian republic. Titian painted her portrait, and her history has been a favorite study for romance writers.

CORNBURY, EDWARD HYDE, Lord, d. 1723. He was grandson of Edward Hyde, first earl of Clarendon, and one of the earliest among the household troops to desert from the service of James II. William III. made him governor of the province of New York, where he arrived in May, 1702. His administration was rapacious and disgraceful, and after six years he was removed. He was for a long time under arrest by his creditors, but was relieved on the death of his father, when he succeeded to the title and estates.

CORNEILLE, THOMAS, 1625-1709; brother of Pierre, and 20 years younger. At an early age he developed a facility for rhyming, and naturally followed his brother's steps. From about his 22d year he produced plays in rapid succession, occasionally with the help of Pierre, but for the most part alone. At his brother's death, he succeeded to the vacant chair in the academy. He then turned his attention to philology and translation, producing a dictionary intended as a supplement to that of the academy. This was followed by a complete translation of Ovid's *Metamorphoses*. Seven years afterwards he lost his sight, but this did not stop his work, for he soon produced in three folio volumes a *Geographical and Historical Dictionary*. Some of his works were remarkably successful. His *Timocrate* had the longest run of any play in the century, and for *La Dévotissime* he received 6,000 livres, the largest sum known to have been paid by an author from a single piece; and finally one of his pieces, *Le Baronde Foudrières*, had the distinction of being hissed off the stage.

CORNELIA, one of the greatest women in Roman history, was the younger daughter of Scipio Africanus the elder, the conqueror of Carthage, and mother of the great tribunes, Tiberius and Caius Gracchus, and of Cornelia, the wife of Scipio Africanus the younger. On the death of her husband, refusing numerous offers of marriage, including even one from king Ptolemy, she devoted herself to the education of her children, a task for which her lofty spirit and wide attainments rendered her admirably fitted, and which had extraordinary results. The only attack ever made upon her lofty reputation was the charge that she was concerned in the death of her son-in-law, Scipio, which was, there is no reason to doubt, a base slander. On her death a statue was erected to her memory bearing the inscription—"Cornelia, Mother of the Gracchi." To a Campanian lady who asked to see her jewels, she is said to have presented her sons as the only jewels of which she could boast. After the murder of Caius, the second of her sons, she retired to Misenum, where she devoted herself to Greek and Latin literature, and to the society of men of letters.

CORNELIUS, ELIAS, D.D., 1794-1832; a native of New York, graduated at Yale, 1813, and studied theology under pres. Dwight, and afterwards under Dr. Lyman Beecher. He was licensed to preach in 1816, and was appointed agent for the American board of commissioners for foreign missions. He was sent to the southern states to raise funds to establish missions among the Indians, and while on his way to the Chickasaw nation he redeemed, from a band of Cherokees, a white girl, whose mother had been killed. He provided for the child, and subsequently wrote her history in *The Little Osage Girl*, which became a popular Sunday-school book. From 1819 to 1826, he was pastor of a Congregational church in Salem, Mass., and in the latter year was appointed secretary of the American education society. In 1829, he was chosen professor of divinity in Dartmouth college, but he declined the place. In 1832, he became secretary of the American board of commissioners for foreign missions.

CORNELL, EZRA, 1807-74; founder of the Cornell university at Ithaca, N. Y. He was b. in Westchester co., N. Y., and was among the earliest to appreciate the great value of the electric telegraph, in the promotion of which he accumulated a large fortune, the greater portion of which went toward the establishment of the noble institution bearing his name. His son ALONZO B. was elected governor of New York in 1879, to hold office for three years.

CORNELL UNIVERSITY, at Ithaca, Tompkins co., N. Y., went into operation in 1868 as an unsectarian institution. Its charter provides that no officer or student shall be admitted or excluded on any religious or political opinions, and that at no time shall the majority of the trustees be of one religious sect or of no religious sect. Its foundation was partly the land-scrip, representing 990,000 acres, which had been received by the state of New York from the national government under the land grant of 1862; and partly a donation of \$500,000 by Mr. Ezra Cornell, of Ithaca; with additions by trustees McGraw, Kelley, Selby, and Sage, and president White. Eleven courses of study lead to degrees, viz.: agriculture, architecture, arts, chemistry and physics, civil engineering, literature, mathematics, mechanics, natural history, and philosophy. Those not studying for degrees choose their own course. Five large buildings are devoted to the uses of the university. A sixth is rented to students and others. Sage college is a boarding-hall for lady students, and Sage chapel is a beautiful building devoted to religious services. The grounds, comprising 258 acres (of which 135 are used as a farm by the agricultural department), are beautifully situated upon the upland e. of the village of Ithaca, 400 ft. above Cayuga lake, are valued at \$94,000, and the buildings at \$570,000. The annual income of the university is about \$100,000. There is a laboratory for anatomy, one for botany, one for general chemistry, one for agricultural chemistry, and one for each of the departments of entomology, geology, mechanic arts, and physics. Among the collections are 187 Rau models of plows from the royal agricultural college of Wurtemberg, the Auzoux veterinary models, models of plants in *papier mache*, the Sandwich islands herbarium, the Jewett collection of fossils, a collection of Brazilian Indian antiquities, the Silliman collection of minerals, the Newcomb collection of 25,000 species of shells, a collection of 850 architectural photographs, and collections of models in architecture and free-hand drawing. The library contains 37,024 bound volumes, and 12,970 pamphlets. On the 1st of Jan., 1880, there were 43 professors and assistant-professors, 8 instructors, 425 students, and 622 alumni. Twenty-five professors and assistant-professors and 7 instructors are engaged in teaching scientific branches; 17 professors and assistant-professors and one instructor in teaching literature, history, and philosophy; and one professor in teaching military science and tactics. During the year ending Aug., 1879, there were 160 classical or partially classical students; 166 strictly scientific, and 158 partially scientific—total, 484. Women are admitted on the same terms as men, except that the former must be 17 years of age. After becoming students, all are upon exactly the same footing, except that women are excused from military drill or its substitute. The first-year class is required to drill two terms of the year three times a week. The three other classes are required to take the same drill or to take extra university work equivalent to two recitations a week. There is no preparatory department. There are no compulsory religious exercises of any kind, nor is any religious test allowable in any case. There is, however, a fund of \$30,000 for the support of Christian preaching in the chapel, and, except in winter, the pulpit is regularly supplied by the best preachers of the various Christian denominations in turn. Each of the assembly districts of the state (128 in all) may send yearly one student for four years' free tuition; the choice to be made by competitive examination from the best scholars, male and female, in the different academies and public schools, but subject to the usual entrance examination at the university.

CORNHERT, or KOORNHERT, DIEDRIK, 1522-90; a Dutch writer on politics and theology. He was secretary to the burgomasters of Amsterdam in 1564, and active in opposing Spanish tyranny, being the author of the manifesto which the prince of Orange published in 1566. He was imprisoned by the government, but escaped to Cleves, where he maintained himself by his art of engraving on copper. When the states became free he returned, and was made secretary of state. He was a famous

theologian, and held controversies with both Roman Catholics and reformers, but refused to join either side.

CORNIFEROUS PERIOD, the second of the five great divisions of the Devonian or old red sandstone age, in American geology. It was the great limestone period of America, and contains the upper Helderberg, the Schoharie, and the Cauda galli epochs.

CORN, INDIAN. See **MAIZE**, *ante*.

CORNING, a t. and village in Steuben co., N. Y., on the Chemung river, and the Erie, the Corning and Blossburg, the Buffalo and Corning, and the New York railroads; 13 m. w. of Elmira; pop. '75 (township), 6,796. The principal trade is in coal and lumber, great quantities of the latter being floated down the Susquehanna. There is also water communication with the Erie canal.

CORNING, ERASTUS, 1794-1872; b. Conn.; early settled in Albany, N. Y., as an iron merchant, where he accumulated a large fortune. He was a member of congress from 1857 to 1863, and again in 1865-67. He was for many years one of the great railroad owners and operators of the country.

CORNISH LANGUAGE, a form of speech allied to Welsh and Armorican; not a living language since the beginning of the century. It seems to have been in use in Cornwall and w. Devonshire, Eng.

CORNPLANTER, d. 1836; Chief of the Seneca Indians, a half-breed, the son of John O'Bail, an Indian trader. He was present at Braddock's defeat, and was one of those who, during the revolution, devastated Wyoming valley. After peace, he became friendly with the Americans, and was, with Red Jacket, a leader and counselor of his people. He was strongly opposed to the use of liquor, and was one of the most eloquent temperance orators of the country. He lived to be 100 years old.

CORN SNAKE, a non-venomous serpent common in the southern states, of brown color, and sometimes 5 ft. long. It is quite tame, and lives upon mice and other small animals.

CORNUTUS, L. ANNÆUS, a Stoic philosopher of the time of Nero, a native of Lybia, but a resident of Rome. He was the teacher and friend of Persius, who left to him all his books and a large sum of money. He took the books, but gave the money to the sisters of the donor. Although a friend of Nero, the tyrant banished Cornutus because he did not like his advice as to the number of books in which he (Nero) proposed to write the history of the Romans. Cornutus was a voluminous writer, but little is known concerning his works.

CORNWALL, a village and township in Litchfield co., Conn., 37 m. w. of Hartford, near the Housatonic railroad; pop. '70, 1772. In 1818, a mission school was established in Cornwall for the purpose of qualifying converts from paganism to preach the gospel to their countrymen. It was discontinued a few years later.

CORNWALL, a t. in Orange co., N. Y., on the w. bank of the Hudson river, a little n. of the highlands, and embracing the village of West Point; pop. '75, 6,572 (including the new town of Highlands). It is a picturesque region, and is much frequented in summer by tourists and sojourners from the cities.

CORNWALL, a t. and port of entry in Stormont co., province of Ontario, Canada, on the n. side of the St. Lawrence river, at the lower end of the Long Sault rapids, 67 m. above Montreal, and on the Grand Trunk railway; pop. about 3,500. There is excellent water-power, and manufacturing is the chief industry.

CORNWALL, BARRY. See **PROCTER, BRYAN WALLER**, *ante*.

CORO (recently named **FALCON**), a state in Venezuela on the Caribbean sea and the gulf of Venezuela, the extreme n. part of the republic; 10,253 sq. m.; pop. 99,920. It is drained by many small rivers emptying into the Caribbean sea, one of which, the Tocoyo, is navigable for 120 miles. The soil is sandy and dry, and a large portion is still covered with forests. The principal productions are coffee, corn, cacao, and tropical fruits.

CORO, or **SANTA AÑA DE CORO**, a maritime t. in Venezuela, capital of the province of Falcon, on the peninsula dividing the gulf of Venezuela from the Caribbean sea, 155 m. w.n.w. of Valencia; pop. 7,000. The town is poorly built, the streets are unpaved, and there are no important public buildings. The climate is hot and unhealthy. The water supply is brought by mules from springs some miles away. There is some trade with the West Indies. This is one of the oldest of the Spanish settlements, having been formed in July, 1527. The town suffered greatly in the Venezuelan war of independence.

CORO'NA, in astronomy, the name given to the phenomenon seen around the sun during a total eclipse. This phenomenon is a complex one, and comprises effects due to the sun's surroundings or the various layers of its atmosphere, to the light falling on something between the observer and the sun, and to certain physiological effects in the eye. The solar part of the phenomenon comprises the "chromosphere," a layer of brightly incandescent hydrogen, with other included metallic vapors, which lie immediately over that interior part of the sun which we ordinarily see; the "prominences,"

or "red flames," which are the local uprisings of the chromosphere; and outside of all, the "coronal atmosphere," which consists, as far as known, of hydrogen less brightly incandescent than that in the chromosphere, and of an unknown substance, the vapor density of which appears to be less than that of hydrogen.

CORONÆ, in meteorology, colored rings seen around the sun or moon through peculiar forms of cloud. See HALO, *ante*.

CORONACH, a dirge, or wailing for the dead, long common among the Gaels of Scotland and Ireland in early times. The practice seems to have been in vogue in Greece and Rome, and is still, to some extent, in use at Irish wakes.

CORONER (*ante*), in the United States, elected or appointed, usually one or more in each county or city. The functions of a coroner are almost exclusively confined to holding inquests upon persons who have died by violence or accident, or in a sudden or mysterious manner. He summons a jury, and if need be a physician, and inquires into the facts, after which a verdict is returned. Neither the coroner nor the jury have any defined responsibility; they can only recommend, except in cases of crime, where the coroner has power to cause arrests and to commit to prison.

COROT, JEAN BAPTISTE CAMILLE, 1796-1875; a French landscape painter. He labored many years without special recognition, but triumphed at last, and received the cross of the legion of honor and many other marks of distinction. Among his works are "View in Italy," "Souvenir of the Environs of Florence," "Dance of the Nymphs," "Sunset in the Tyrol," "Hagar in the Desert," "Dante and Virgil," "Repose," "Solitude, etc.

CORPORAL (*ante*), in the United States, does not differ from the same officer in England. He is the lowest officer in a company, standing between a private and sergeant, and does duty in the ranks as a private, except that he places and relieves sentinels, and at drill has charge of a squad.

CORPORATION (*ante*). There are, strictly speaking, no ecclesiastical corporations in the United States. In addition to the explanation given respecting English corporations which serves equally to define the position of our own, it may be said, that corporations are public and private. A public corporation (as a village) is a governmental instrument, and may be dissolved at the will of the creating power; but a private corporation, as a college, cannot be dissolved at will, as no state has the power to deny obligation of contracts. Therefore it is that in many instances the right of repeal is reserved by the state in the charter of the corporation. But a private corporation may be dissolved for the non-fulfillment of contract, for misdirection of funds, and for other causes. The law respecting the power of corporations to inherit money or estate is differently construed in different states; in some they are entirely deprived of right of inheritance, while in others they have the right under various restrictions, such as the limitation of the value of the bequest, or an expiration of a certain time between the making of the will and the death of the testator. A corporation may, through an agent, act outside of the limits of its own state, unless prohibited from so doing by a special enactment. The direction of corporations is never placed in the hands of one person, as in England, but is generally vested in a board of trustees. The property of a corporation is subject to the control of the U. S. court of bankruptcy, and the corporation may be sued as an individual.

CORPS D'ARMÉE (*ante*), a title not used in the United States. At present the army is in three great divisions: the Atlantic, the Pacific, and the Missouri. During the late war, sections of the army were known by location, such as the army of the Potomac, or of the Cumberland.

CORPS LÉGISLATIF, the name of the lower house of the French national legislature under Napoleon III. from 1857 to 1870. Members were elected for six-year terms.

CORPULENCE. See OBESITY, *ante*.

CORPUS CATHOLICORUM, a name given in Germany after the peace of Westphalia to the Roman Catholic division of the empire. The elector of Mayence was at the head or president of the corpus catholicorum, which generally held its meetings in a convent of that city in which the diet happened to meet. The corpus catholicorum was extinguished by the abolition of the German empire in 1806.

CORPUS CHRISTI, the seat of justice of Nueces co., Texas, 178 m. s.e. of Austin; pop. '70, 2,140—288 colored. There is a good harbor, with steamboat communication with New Orleans, and considerable trade.

CORPUSCULAR ACTION, and CORPUSCULAR PHILOSOPHY. See ATOM, *ante*.

CORPUS DOCTRINÆ, collections of writings which were intended to have authority in the Protestant churches of Germany. The chief collection was *Corpus Philippi-cum*, containing the Apostolic, the Nicæan, and the Athanasian creeds, the Augsburg confession, and Melancthon's *Loci Communes*. This, and similar collections were superseded by the *Formula Concordiæ*.

CORPUS JURIS. See LAW, *ante*.

CORPUS JURIS CANONICI. See CANON LAW, *ante*.

CORREIA DA SERRA, JOSÉ FRANCISCO, 1750-1823; a Portuguese politician and scientist, who was educated and took orders in Rome. With the assistance of the duke of Alafoës, he founded the Portuguese academy of science, in Lisbon, and was made perpetual secretary with the privilege of publishing its transactions without reference to censorship. He soon came in conflict with the church, through the inquisition, and fled to France, and afterwards went to England, where he became secretary to the Portuguese legation. In 1813, he came to New York; and in 1816, he was made Portuguese minister at Washington; in 1820, he was called home and made a member of the financial council, with a seat in the cortes. He ranked high as a botanist.

CORRIE, DANIEL, 1777-1837; a native of England, who was appointed archdeacon of Calcutta in 1823, and bishop of Madras in 1835. He was a laborer in missions with Buchanan, Martyn, Heber, and Turner. He translated prayers, homilies, and other religious works into Hindustanee, and made an ancient history in English for schools in India.

CORRY, a city in Erie co., Penn., an outgrowth of the great petroleum speculation, situated at the crossing of the Atlantic and Great Western, and Philadelphia and Erie railroads, and at the terminus of other roads in the oil region; pop. '70, 6,809. There are manufactories, and general business; but its establishment and prosperity are due to the discovery of oil, or petroleum. It was chartered as a city in 1866.

CORSSEN, WILHELM PAUL, 1820-75; a German philologist, a native of Bremen, educated in the university of Berlin, and professor in the Stettin gymnasium. He published *The Pronunciation, Vocalization, and Accentuation of the Latin Language*, which is considered to be the best work thus far published on the subject. At the time of his death he was engaged on the second volume of an elaborate work on the Etruscan speech.

COR'TE, a t. in Corsica, on the Tavignano, 35 m. n.e. of Ajaccio; pop. '66, 6,094. Paoli, a native of the place, established and endowed here in 1836 an important school. There is also a communal college.

CORTE-REAL', the name of a noble Portuguese family. In 1500, Gaspard Corte-Real landed on the Labrador coast and stole some of the natives, whom he took to Portugal and sold for slaves. He went the next year for another cargo, but never returned. Then his brother Miguel set out to find him, and he never returned. Then the king of Portugal sent two ships to find them, but nothing could be learned of their fate. A third brother, Vasco, intended to make a search, but was prevented by the king. The family produced one poet, Jeronymo, who also was a sailor.

CORTLAND, a co. in central New York, intersected by the Syracuse and Binghamton and the Southern Central railroad; 480 sq.m.; pop. '75, 24,454. There is iron ore in some places, but agriculture is the chief business, the production of cheese, butter, and maple sugar being prominent. Co. seat, Cortland.

CORTLAND, a village and seat of justice of Cortland co., N. Y., on the Syracuse and Binghamton railroad, 36 m. s. of Syracuse; pop. of township, '75, 6,184.

CORTONA, PIETRO BERRETTINI DA, 1596-1669; an Italian architect and painter employed by Urban VIII. to decorate a chapel and to execute the frescoes on the ceiling of the grand salon of the Barberini palace, which, with others from his hand, are among the most remarkable specimens of decorative art of the period. The church of Santa Maria del Pace in Rome was his best architectural work.

CORUNNA, a province of Spain, in Galicia, forming the extreme n.w. corner of the kingdom, bordering on the bay of Biscay and the Atlantic ocean; about 3,000 sq.m.; pop. '70, 630,504. It has a sinuous and rugged coast, and is traversed by mountain ridges, between which run a number of small rivers. Much of the province is still woodland, and wild boars infest the original forests. Iron, silver, copper, and coal are found. There is a moderate degree of agriculture. The chief town is Corunna.

CORVINUS, MATTHIAS. See MATTHIAS CORVINUS, *ante*.

CORVUS, M. VALERIUS, a general of the early Roman republic, b. about 370 B.C. He was twice dictator and six times consul, and occupied the curule chair 21 times. He defeated the Gauls, the Volsci, the Samnites, the Etruscans, and the Marsi. He lived to be 100 years old.

CORWIN, THOMAS, 1794-1865; b. Ky.; a lawyer, practicing in Ohio, where his eloquence soon made him politically prominent. He was a leading member of the whig party, and a member of congress in 1830. In 1840, he was chosen governor of his state; in 1845, elected to the U. S. senate, where he made a powerful speech against the proposed war with Mexico. In 1850, he was secretary of the treasury; in 1858, again a member of congress; and in 1861, minister to Mexico. He was a man of great force of character.

CORYBANTES, priests of Cybele, in Phrygia, who celebrated her worship by dressing in full armor and performing loose dances to the music of flutes and cymbals. It is said that under the influence of the music and the dance they became insane, and

were supposed to be possessed by spirits. In Rome the priests of Cybele were called Galli.

CORYELL, a co. in central Texas on Leon river; 960 sq.m.; pop. '70, 4,124—279 colored. The surface is rolling or hilly, with timber-land and prairie. Stock-raising is the principal business. Co. seat, Gatesville.

COSENZA, a province in Calabria, s. Italy, between the gulf of Tarento and the Mediterranean; 2,841 sq.m.; pop. 440,468. The region is mountainous, being traversed by the Apennines down to the sea. The vine, the olive, silk, and fruits are cultivated.

COSHOC'TON, a co. in central Ohio, on the Muskingum river and its tributaries, traversed by the Ohio canal, and the Pittsburg, Cincinnati and St. Louis railroad; 516 sq.m.; pop. '70, 23,600. The surface is hilly, and the soil is generally productive: wheat, corn, oats, butter, and wool are the chief productions. Co. seat, Coshocton.

COSMOG ONY (*ante*), properly denotes the science of the world's formation, but, in the absence of knowledge, is applied to theories on the subject and even to mythical accounts. The views of the ancients in regard to it may be comprised in three classes. 1. That the world is eternal both in matter and form. Aristotle taught that heaven and earth, inanimate substances and living beings, had no beginning, but were the eternal effect of an eternal cause. Yet he believed that that cause was a spiritual substance; that God is an intelligent spirit, incorporeal, indivisible, immovable, the mover of all things; and that the world is an emanation from him rather than a creation by him. 2. That the matter of the world is eternal, but not its form. Asserting that from nothing nothing could come, many felt compelled to maintain that the world has always existed in some form. Yet the many evident changes equally compelled them to deny that any one form was eternal. The first forms, as they said, had a succession of variable movements which became regular by chance. The Greek poets, following the old mythological views, represent the universe as coming forth from chaos and darkness, without the action of God. Some philosophers ascribed all things to an infinity of atoms or indivisible particles, having form, size, and weight, existing from eternity, moving by chance, combining into a variety of substances, and changed in the progress of time into the present organization of things. The Stoics attributed the origin of all things to two principles which they called God and matter, yet regarded them both as corporeal, as they did not admit the existence of spiritual beings. 3. The third theory ascribes the origin of the world to a great spiritual creator. There are traces of it among the Etruscans, Magi, Druids, and Brahmans, who probably derived it by tradition from a primitive revelation. It was, to some extent, received among the Greeks and Romans. It is especially the doctrine of the Scriptures, which teach it with the supreme design of exhibiting the wisdom and power of God rather than of setting forth, with what we call scientific exactness, the modes and processes by which the worlds were formed. They employ common language as that which the most scientific and the most uncultured alike understand and use. And although their main design is not to teach physical science, yet, considered as the word of God, whenever they do speak concerning his works, they must speak the truth. That the harmony between the word and the works may appear, it is necessary that both should be fully understood. If either or both be incorrectly interpreted, contradictions necessarily appear. In the past, the interpretations of both have been either absolutely false or only imperfectly true. But as biblical and physical science, each in its own line, advance towards perfection, the harmony between them is seen to be great and wonderful.

The account at the opening of the Bible, as at present understood, sets forth the following points. 1. That the matter of the world had its origin "in the beginning" by the action of God. The word *bara*, translated "create," is used three times in the narrative, at its great transition points, with reference to the original *matter*, of *animal life*, and of man endowed with *spiritual life*; in all other instances, where processes of formation only are implied, another word, *asah*, translated "made," is used; and at the close both are joined together: "God created to make." 2. Matter in its primitive state is said to have been "without form and void;" both words have substantially the same meaning—*empty*, and by the repetition signify *very empty*; thus they supply the fit description of gaseous matter. 3. It is said that darkness prevailed unbroken. 4. That motion was imparted to the mass. The root of the word *le-hom* signifies, revolving or circular motion, and the form of it denotes that to which such motion has been imparted. 5. The action of God's power on the mass. 6. Light diffused through the mass as one of the first results of motion. 7. Separation of light from darkness. Light, wherever existing, is called "day," and darkness, wherever remaining, is called night. This marked off the *first* period. 8. The *second* period was distinguished by the formation, not of a "firmament" (as the English translation has it, from the Latin *firmamentum*, and that from the Greek *στερεωμα*, all describing the heaven as a solid sphere), but of an *expanse*, as Moses says, giving a good expression for the atmosphere expanded around the world. The great idea of the second period's work is division or separation. This follows from motion as certainly as light. "The vast primitive nebula of the first period breaks up into masses, and these are concentrated into stars." 9. To the *third* period two works are assigned: (a) The formation of the material globe of the earth. The main fact expressed is the condensation of matter into the solid globe and its liquid covering.

The result is given without any statement of the process. (b) The introduction of vegetable life as the connecting link between inert matter and animal life. An outline of the system is given once for all at the origin of it. 10. At the *fourth* period, the sun, moon, and stars appeared as within the earth's atmosphere, to give light to the earth; to divide its day from its night; and to govern its seasons, days, and years. These were not *formed* in the fourth period, but then *appeared*, the original light of the earth having declined sufficiently to make them visible within its atmosphere. 11. The *fifth* and *sixth* periods unfold the successive creation of the various tribes of animals which people the water, the air, and the land, "in the precise order indicated by geology." In the *fifth* the water-animals were created, marine monsters and birds; the *sixth* (the third period in the era of life) was distinguished (as the third in the era of matter had been) by two works: (a) the formation of the higher animals that live on the land, and (b) the creation of man. For the former, the word employed is "God *made*." The word "create" having been used to describe the beginning of animal life, all the modifications of it are described only as "*made*." But the second work of the sixth period was the introduction of a higher order of life, consequently it is said, God "*created*" man in his image. 12. The creative and formative works of the six periods are followed by the seventh, the period of God's resting from them both. That this is still in progress is indicated in the *record* by no evening being assigned to it, as had been to all of the six, and in the *universe* by its being simply upheld in existence without the creation of any new worlds or new orders of creatures. And as the Scriptures, at the beginning, declare the fact of God's resting from the work of formation, so, at the close, they announce that the work is to be resumed. He that sitteth on the throne said—"Behold, I make all things new." These six periods of work the account calls "*days*." For a long time it was assumed, without reflection, that they were only 24 hours long. Consequently when, by examination of the rocks and strata of the earth, scientific inquirers were brought to believe that its formation had been continued through a very long period, there was an apparent and startling contradiction between the new science and the Bible. But the account in Genesis nowhere limits the length of the periods. It uses the Hebrew word *yōm* (to which the English word "*day*" corresponds) in six different applications. 1. As meaning *light*, in opposition to darkness or night, without reference to duration. 2. The day of 24 hours—the period of the rotation of the earth, indicated by the apparent rising and setting of the sun and stars. 3. The illuminated portion of these 24 hours, as distinguished from the dark, making the earth's day and night. 4. The cosmogonic day, the length of which is the question to be determined. 5. The sum of the whole six of these periods—"in the day that the Lord God made the heavens and the earth." 6. The seventh day, without being yet ended, has already been as long as the whole number of years since the earth and heaven were made ready for man—that is, according to the lowest computation, nearly 6,000 solar years. Moreover, the account does not determine how long the interval was between "the beginning" and the origin of light, or that between the successive periods of work. If, therefore, the strata of the earth certainly show that they have been formed during a very long period of time, what is there in the Mosaic account that is inconsistent with them? The views on the scientific side of the subject presented in this article have been either taken from the published writings of prof. Arnold H. Guyot or confirmed by comparison with them.

COSTA-CABRAL', ANTONIO BERNARDO DA, Count de Thomar, b. 1803; a Portuguese statesman, educated at Coimbra; judge of the supreme court in Oporto and in Lisbon; a representative in 1835, and prime minister in 1838, and again in 1841. In the next year he fomented insurrection in Oporto, assumed control of the army, established a censorship of the public schools, suppressed the universities, and so oppressed the people with taxes that he was driven from power in 1846. In 1849, he was once more appointed prime minister, and again played the dictator; but was compelled to resign. The queen refused to accept his resignation, and a revolution was started against him, which overthrew his administration in April, 1851. He fled to England, but returned the next year, and became a member of the council of state. From 1859 to 1861, he was minister to Brazil.

COSTA RICA (*ante*). This republic has been an independent state since 1821, from 1824 to 1839 forming a part of the confederation of Central America, and subsequently separate; now governed under the constitution of Dec. 22, 1871. The legislative power is vested in a congress of one chamber, chosen in electoral assemblies, the members of which are returned by universal suffrage. The congressmen are elected for four years, one half retiring every two years. The executive authority is in the hands of a president, elected in the same manner as the congress for four-year terms. He is assisted by two vice-presidents, elected annually by the congress. In recent years, there have been constant changes by revolutions and wars, so that few presidents have served their full terms. The administration is carried on by the ministers of justice and the interior, of public instruction and foreign affairs, of finance and commerce, and of public works. The latest estimate of the area of the republic is 26,040 sq. miles. There exist only vague estimates of the population, which is supposed to number from 180,000 to 190,000, but stated at twice as much in government returns. The exports of the country con-

sist almost entirely of coffee. In 1874, there was in process of construction a line of railway from Alajuela to Limon, 114 m., destined to connect the Atlantic and Pacific oceans. At the close of June, 1877, there were in all the country 200 m. of telegraph lines. The old weights and measures of Spain are in use, but the French metric system will probably soon be introduced.

Costa Rica is exceedingly fertile, its forests being filled with an immense variety of timber and useful dye-woods, such as mahogany, ebony, india-rubber, Brazil wood, and oak. Nearly all the fruits of the tropical and temperate zones thrive well, and flowering plants are in great profusion. Coffee, rice, maize, barley, potatoes, beans, and bananas are cultivated in the interior; cocoa, vanilla, sugar cane, tobacco, cotton, and indigo on the warmer coast lands. In the forests are the jaguar, tapir, ocelot, puma, deer, and wild pig. Birds of all kinds, including the splendid quetzal or trogen, fill the woods. Among reptiles are the alligator, the iguana, and many other lizards, the bobo, the black-snake, and the rattlesnake. Among domestic animals, oxen and mules are the most valuable. There are no manufacturing industries worth noticing; but the country is rich in gold, silver, copper, iron, nickel, zinc, lead, and marble, of which only gold, silver, and copper have been worked. The country is divided into the six provinces of San José, Cartago, Hérédia, Alajuela, Guanacaste, and Punta Arenas.

Costa Rica was one of the earliest discovered parts of America; Columbus touched its shores on his third voyage. In 1821, when all the provinces which formed the kingdom of Guatemala declared their independence of Spain, two parties—one desiring union with Mexico under the dynasty of Iturbide, the other seeking to form a separate republic—divided opinions in the revolted provinces. In Costa Rica, the town of Cartago chose the former, and San José the latter. The opposing factions met, and the republicans were victorious, whereupon the seat of government was transferred from Cartago to San José. In 1824, Costa Rica joined the Central American confederation; but that union was dissolved in 1839. In 1856, fearing for her own safety, the republic declared war against the filibuster William Walker, who had taken possession of Nicaragua. The Costa Rican forces, led by the president, Don Juan Mora, met Walker's troops under col. Schlesinger near Santa Rosa, routed them, followed them into Nicaragua, and, in conjunction with the forces of the other states, surrounded Walker in the city of Rivas, forcing his surrender to the commander of the United States sloop *St. Mary's*, under whose protection he left the country. On the 17th of Feb., 1872, the ministers plenipotentiary of Costa Rica, Guatemala, Honduras, and San Salvador formed another Central American union, consisting of the independent republics named. The main objects of this union are to preserve the autonomy and integrity of Central American territory, to maintain the peace of the several states, to insure to each a republican form of government, to guarantee to every citizen full political liberty, and to promote progress, moral, intellectual, and material. Slavery was denounced, confiscation abolished, and the extradition of political offenders prohibited.

COSTE, JEAN JACQUES, MARIE CYPRIEN VICTOR, b. 1807; a French naturalist noted for researches in embryology, and for efforts toward the cultivation of fishes in his country. Mainly through Coste's influence, 600,000 salmon and trout were placed in the Rhone within two years. In 1862, he was appointed inspector-general of the river and coast fisheries. He has long been a member of the academy, and has published dissertations on pisciculture and embryology.

COSTILLA, a co. in s. central Colorado, w. of the Rocky mountains, and bordering on New Mexico, bounded on the w. by the Rio Grande del Norte; 2,000 sq. m.; pop. '70, 1779, mostly Mexicans and Roman Catholics in religion, still dwelling in adobe houses. Stock-raising is the main business. Co. seat, Costilla.

COSTS (*ante*), in legal practice in the United States, are very much as in England, nearly all the states of the union having adopted substantially the statute of Gloucester, 6 Edw. I. c. 1. Statutes which give costs are not to be extended beyond the letter, but must be strictly construed. They do not extend to the government, and therefore when the United States is a party they neither pay nor receive costs unless by express provision of a statute. In equity, the giving of costs is entirely discretionary, as well with respect to the period at which the court decides upon them, as with respect to the parties to whom they are given. In the exercise of their discretion, courts of equity are generally governed by certain fixed principles.

CO-TIDAL LINES, a system of lines on a globe or chart which show the movement of the ocean tidal waves. The lines mark the places of high water at the same moment.

COTTLE, JOSEPH, 1774-1853; a publisher and bookseller of Bristol, England, and especial friend of Southey and Coleridge whose first poems he put before the public. He wrote poems himself, and a volume of reminiscences of the two poets named. His brother, who made a poor translation into English of the *Norse Edda*, lives only in Byron's sarcastic couplet in *English Bards and Scotch Reviewers*.

COTTON (*ante*). Cotton culture in the United States began feebly in Virginia in 1621, when the seed was planted by way of experiment, and its easy growth attracted much interest in England. In books relating to the early English settlements, "cotton

wool" is spoken of as one of the products of that happy country "seated near the midst of the world, between the extremities of heat and cold." For a long time the cultivation was limited to gardens or small fields, and only for home use. The cultivation appears, somewhat singularly, to have spread northward rather than southward. Traces of the culture are found in Maryland, Delaware, New Jersey, and Pennsylvania, down to the era of the revolution. In 1776, it was grown near Philadelphia in sufficient quantity for domestic uses; but very little was used, human clothing being chiefly of linen and woolen fabrics. It was first planted in the Carolinas and Georgia in 1733, and in Louisiana in 1742. In 1747, several bags of the staple were exported from Charleston; and in 1770, there were shipped to Liverpool three bales from New York, four from Maryland and Virginia, and three barrels full from North Carolina. It was near the close of the 18th c. before the cotton trade of the United States became important. Our crop in 1791 was estimated to be 2,000,000 lbs. In 1795, the few factories in this country were still importing foreign cotton; the imports in that year were 4,107,000, and the exports 6,276,300 lbs. In 1801, the crop was 48,000,000 lbs., of which 21,000,000 lbs. were exported. In 1810, the exports were 94,000,000 lbs. In 1813, owing to the war with England, only 19,400,000 lbs. were exported; the price in the United States was 12c. per lb., while in England it was three times as much. In 1821, the yield of the United States was 180,000,000 lbs., of which nearly 125,000,000 lbs. were exported. In 1825, the crop rose to 255,000,000 lbs. The following table gives the annual product of the United States in bales since 1829. The average weight of a bale is 440 lbs.:

Year.	Bales.	Year.	Bales.	Year.	Bales.	Year.	Bales.
1829.....	870,415	1841.....	1,634,945	1853.....	3,262,882	1869.....	2,429,039
1830.....	976,845	1842.....	1,688,574	1854.....	2,930,027	1870.....	3,154,946
1831.....	1,038,848	1843.....	2,378,875	1855.....	2,847,339	1871.....	4,352,317
1832.....	987,487	1844.....	2,030,409	1856.....	3,527,845	1872.....	2,974,351
1833.....	1,070,438	1845.....	2,394,503	1857.....	2,939,519	1873.....	3,930,508
1834.....	1,205,324	1846.....	2,100,537	1858.....	3,113,962	1874.....	4,170,388
1835.....	1,254,328	1847.....	1,778,655	1859.....	3,851,481	1875.....	3,832,991
1836.....	1,360,752	1848.....	2,347,624	1860.....	4,669,770	1876.....	4,669,288
1837.....	1,422,930	1849.....	2,728,596	1861.....	3,656,006	1877.....	4,485,423
1838.....	1,801,497	1850.....	2,096,706	1866.....	2,193,987	1878.....	4,811,265
1839.....	1,360,532	1851.....	2,355,257	1867.....	2,019,774	1879.....	5,073,531
1840.....	2,177,835	1852.....	3,015,029	1868.....	2,593,993		

[There is no record of production during the war of the rebellion.]

The section of the United States where this staple is largely cultivated is called the "cotton belt," and includes nearly the whole of the states named in the following table of acreage, or surface in acres growing cotton in each year from 1871 to 1877:

STATES.	1871. Acres.	1872. Acres.	1873. Acres.	1874. Acres.	1875. Acres.	1876. Acres.	1877. Acres.
North Carolina...	388,474	450,629	513,717	457,208	621,428	609,000	584,640
South Carolina...	523,535	570,652	677,717	571,222	955,050	945,500	917,135
Georgia.....	1,170,832	1,311,331	1,455,577	1,310,020	1,611,702	1,515,000	1,530,150
Florida.....	143,727	153,099	167,584	152,501	185,393	165,000	166,650
Alabama.....	1,250,427	1,387,972	1,499,009	1,289,148	1,732,250	1,732,250	1,766,895
Mississippi.....	1,397,835	1,537,618	1,706,755	1,501,944	2,016,326	1,976,000	2,055,040
Louisiana.....	847,044	940,218	1,034,239	827,391	1,415,730	1,260,000	1,335,600
Texas.....	774,806	914,269	1,097,122	1,119,064	1,483,500	1,483,500	1,706,025
Arkansas.....	597,857	693,512	811,409	722,154	1,133,000	1,133,000	1,189,650
Tennessee.....	463,042	518,605	596,395	548,683	780,000	741,000	755,820
Total.....	7,557,579	8,432,905	9,509,524	8,499,335	11,934,379	11,560,250	12,007,605

The yield of cotton per acre varies from 100 to 250 lbs. The heaviest recorded production per acre for a series of years was in Arkansas, Texas, and Louisiana. Half a bale to the acre is considered to be a good crop.

This great staple is by no means easy to cultivate, and the results of the crop are always uncertain. The plant loves the sun, and is easily damaged by a wet season or by an early frost. It has, also, many insect enemies, and is liable to diminution by insufficient culture. The planting of seed, beginning in Texas in February, is later as one goes northward, closing in North Carolina and Tennessee not before early in May. The seed, resembling a bean in its early growth, shoots up two green leaves, striking a tap-root deep into the earth, and growing in a few days 2 or 3 in. high. More leaves soon appear, and in about three weeks a process of plowing and cutting out the superfluous plants begins, leaving only 3 or 4 plants in a bunch, the bunches being from 1 to 2 ft. apart. The plowing is twice repeated, followed by the hoe, cutting out all the grass, and all the plants except one in a hill. What is known as the "stand" of cotton is of great consequence. Bringing to a stand and cutting out all the plants except one on a hill, gives additional growth, vigor, and productiveness to the remaining plants. The flower or bloom of the plant, white in the morning, and red in the evening, comes usually in June. The flower drops off after about 3 days, leaving a small ball which

incloses the cotton wool. The shell finally bursts and the balls are ready for picking from the bush from Sept. to Dec., according to latitude, season, and time of planting. The ball is about the size and shape of the egg of the guinea hen. The balls are picked by hand and cast into large sacks loosely suspended from the shoulders. A good picker will gather from 150 to 200 lbs. per day. The next process is the ginning, or separating the fiber from the seed. This is done by passing the balls over a revolving apron and circular saw run at high speed to cut the fiber from the seed. The seed falls to the ground, and the fiber is blown from the gin into the picking room. The seed weighs nearly twice as much as the fiber. About one fourth of it is reserved for planting, and the remainder is sold for making oil. The fiber is then compressed by powerful presses into bales, and is ready for market.

The raising of cotton in the United States shows a steady and rapid increase. In 13 years before the rebellion there were 40,994,419 bales produced; in 13 years following the war the product was 45,627,847 bales; and this in spite of the disturbance of labor in the cotton-raising states by emancipation and the extreme financial depression of the planters. The price of cotton from 1825 to 1877 inclusive is shown in the table below. The highest and lowest price for each year is given in cents. The figures from 1862 to 1877 represent United States currency, but those for the last year differ very little from gold:

PRICE.			PRICE.			PRICE.		
Year.	Lowest.	Highest	Year.	Lowest.	Highest.	Year.	Lowest.	Highest
1825.....	13	27	1843.....	5	8	1861.....	11	28
1826.....	9	14	1844.....	5	9	1862.....	20	68
1827.....	8	12	1845.....	4	9	1863.....	54	88
1828.....	9	13	1846.....	6	9	1864.....	72	1.90
1829.....	8	11	1847.....	7	12	1865.....	33	1.22
1830.....	8	13	1848.....	5	8	1866.....	32	52
1831.....	7	11	1849.....	6	11	1867.....	15	36
1832.....	7	12	1850.....	11	14	1868.....	16	33
1833.....	9	17	1851.....	8	14	1869.....	25	35
1834.....	10	16	1852.....	8	10	1870.....	15	26
1835.....	15	20	1853.....	10	11	1871.....	15	25
1836.....	12	20	1854.....	8	16	1872.....	18	25
1837.....	7	17	1855.....	7	11	1873.....	13	21
1838.....	9	12	1856.....	9	12	1874.....	15	19
1839.....	11	16	1857.....	13	15	1875.....	13	17
1840.....	8	10	1858.....	9	13	1876.....	11	13
1841.....	9	11	1859.....	11	12	1877.....	11	13
1842.....	7	9	1860.....	10	11	1878.....	9	12

The cost of production and the price obtained in the market for the cotton crop raised in 1876 and sold in 1877 are thus stated. To avoid fractions, the sums are put in mills, or tenths of a cent.

STATES.	Cost per lb. of product'n.	Price obtained.	STATES.	Cost per lb. of product'n.	Price obtained.
North Carolina.....	93	98	Louisiana.....	97	102
South Carolina.....	94	97	Texas.....	80	91
Georgia.....	93	98	Arkansas.....	90	99
Florida.....	87	92	Tennessee.....	90	98
Alabama.....	99	101		—	—
Mississippi.....	98	102	Average.....	92	98

Even at this small margin of six tenths of a cent on a lb. the crop of 1876 paid the planters a profit of nearly \$12,000,000. The total value of crop at place of shipment is but a little less than \$200,000,000 per year.

The home manufacture of cotton is one of the most important industries of the country. The subjoined table shows the distribution of the manufacture by states, and into northern and southern groups. It gives the number of mills or factories, the number of spindles, and lbs. of cotton used in 1875.

STATES.	Mills.	Spindles.	Lbs. used.	STATES.	Mills.	Spindles.	Lbs. used.
Maine.....	27	638,914	33,603,236	Alabama.....	14	58,480	6,756,170
New Hampshire.....	36	815,709	57,326,126	Arkansas.....	2	1,781	132,400
Vermont.....	16	46,344	2,372,420	Georgia.....	47	131,310	23,299,303
Massachusetts.....	206	3,775,634	208,894,352	Kentucky.....	3	9,514	2,420,362
Rhode Island.....	129	1,438,479	61,409,470	Louisiana.....	3	2,260	713,033
Connecticut.....	108	889,784	45,492,513	Mississippi.....	9	18,256	1,900,800
New York.....	66	615,205	23,473,169	Missouri.....	3	19,700	2,810,485
New Jersey.....	22	178,928	10,114,300	North Carolina.....	31	54,500	9,671,028
Pennsylvania.....	60	451,907	31,572,305	South Carolina.....	18	55,384	6,701,718
Delaware.....	8	48,276	3,858,162	Tennessee.....	40	70,282	982,365
Maryland.....	20	127,352	21,364,020	Texas.....	2	5,700	—
Ohio.....	4	13,000	1,764,000	Virginia.....	9	54,624	5,560,825
Indiana.....	4	22,988	3,261,340				
Total North.....	694	9,057,543	509,009,613	Total South.....	181	481,821	67,733,140
				Whole country...	875	9,539,364	576,742,753

This amount represents 1,242,080 bales.

In regard to the goods manufactured, the following figures will be interesting:

COTTON GOODS MANUFACTURED IN THE UNITED STATES—1875.

	N. England States.	Middle and Western.	Total Northern.	Total Southern.	Total Un'd States.
Threads, yarns, and twines, lbs.....	45,000,000	19,000,000	64,000,000	19,000,000	83,000,000
Sheetings, shirtings, and plain goods, yds...	540,000,000	91,000,000	631,000,000	92,000,000	726,000,000
Twilled and fancy osnaburgs, jeans, etc., yds	180,000,000	45,000,000	226,000,000	21,000,000	247,000,000
Print cloths, yds.....	640,000,000	102,000,000	749,000,000	.....	749,000,000
Gingham, yds.....	30,000,000	5,000,000	35,000,000	.....	35,000,000
Ducks, yds.....	12,000,000	16,000,000	28,000,000	.....	28,000,000
Bags, No.....	8,000,000	2,000,000	10,000,000	.....	10,000,000

The following shows the exports of raw cotton and cotton manufactures from the United States since 1835. Before that period our manufactures of such goods were comparatively unimportant. In both columns value is expressed in dollars, and not quantity.

Year.	Raw Cotton.	Manuf'd.	Year.	Raw Cotton.	Manuf'd.	Year.	Raw Cotton.	Manuf'd.
1835.....	\$64,961,302	\$2,858,681	1850.....	\$71,984,616	\$4,734,424	1865.....	\$6,836,400	\$3,223,637
1836.....	71,284,925	2,255,734	1851.....	111,315,317	7,241,205	1866.....	281,385,223	1,780,165
1837.....	63,240,102	2,831,473	1852.....	87,965,732	7,672,151	1867.....	201,470,423	4,698,235
1838.....	61,556,811	3,758,755	1853.....	109,456,404	8,768,894	1868.....	152,827,733	4,871,054
1839.....	61,238,982	.....	1854.....	93,596,220	5,535,516	1869.....	162,633,052	5,874,222
1840.....	63,870,307	3,549,604	1855.....	88,143,844	5,857,181	1870.....	227,027,624	3,787,282
1841.....	54,330,341	3,122,546	1856.....	128,332,351	6,967,309	1871.....	218,327,109	3,558,136
1842.....	47,593,464	2,970,690	1857.....	131,575,859	6,115,177	1872.....	180,684,595	2,304,330
1843.....	49,119,806	3,223,550	1858.....	131,386,661	5,651,504	1873.....	227,243,069	2,947,528
1844.....	54,063,501	2,898,780	1859.....	161,434,923	8,216,222	1874.....	211,223,580	3,095,840
1845.....	51,739,643	4,327,928	1860.....	191,806,555	10,934,796	1875.....	190,638,625	4,071,822
1846.....	42,767,341	3,545,481	1861.....	34,051,483	8,059,549	1876.....	192,659,262	7,722,978
1847.....	53,415,848	4,082,533	1862.....	1,180,113	2,946,464	1877.....	171,118,508	10,235,843
1848.....	61,998,294	5,718,205	1863.....	6,652,405	2,906,411	1878.....	179,031,484	11,435,628
1849.....	66,396,967	4,923,129	1864.....	9,895,854	1,246,216	1879.....	162,304,250	10,853,950

There are some material differences in the varieties of cotton, as will be seen by the following classification in the principal English markets running from the most down to the least valuable: Sea island, middling; Egyptian, fair; Peruvian, fair; Pernambuco, fair; West India, fair; New Orleans, middling; Mobile, middling; upland, middling; and India cotton of four lower grades. Where the long staple Sea island (American) brought 23*d.* per lb., upland (which represents the average price of cotton at large) sold at less than 11*d.*

COTTON, CHARLES, 1630-87; an English translator and poet, educated at Cambridge. He was a friend of Izaak Walton, and accompanied him on his fishing excursions. His works, nearly all in verse, are translations of Corneille's *Horace*; the *Life of the Duke d'Espernon*; *The Fair One of Tunis*, a translation of Montaigne; *The Scarronides*, a *Virgil Travestie*; the *Voyage to Ireland*; and *The Wonders of the Peak*.

COTTON, JOHN, 1585-1652; one of the earliest of Boston ministers, educated at Trinity college, Cambridge, and, in 1612, vicar of St. Botolph's church in Boston, Eng., where he remained 20 years. He leaned towards puritanism, for which he was cited to appear before archbishop Laud, instead of doing which he fled to America, arriving in Boston Sept. 4, 1633. There he became pastor of the First church. He was well educated, and was remarkable for simplicity and plainness in his pulpit discourses. It is said that from his strictness in keeping the Lord's Day, came the New England custom of beginning Sunday on Saturday night at sunset: but this can scarcely be correct, as earlier sources for this custom can easily be traced.

COTTONWOOD, a co. in s.e. Minnesota on the Des Moines river, and the tributaries of the Big Cottonwood, intersected by the St. Paul and Sioux City, and the Winona and St. Peter's railroads; 725 sq.m.; pop. '70, 534. Surface undulating, and soil fertile.

COTTON WORM, the caterpillar of a moth of the tribe *noctua*. The insect is of triangular shape, about an inch long, the upper wings reddish gray, and the under wings darker. The caterpillars have 16 feet, and in creeping they raise the back like the inch-worm, or span-worm. They are green, with light yellow stripes, and black dots along the back. These worms are sometimes terribly destructive to young cotton plants.

COUCH, DARIUS NASH, b. N. Y., 1802; graduate of West Point. He served regularly in the army from 1846 to the close of the war of the rebellion, becoming maj.gen. of volunteers. In 1865, he resigned, and was in that year the democratic candidate for governor of Massachusetts, but failed of election.

COUNCIL (*ante*). Among Congregationalists is an assembly composed of ministers and delegates from neighboring churches, called by a local church, as occasion arises, to

act or assist in ordaining a minister, or give advice on matters referred to it. Its power is only advisory. They have also a national C., whose name has been criticised as not accurately indicating its character, composed of delegates from all parts of the denomination, and meeting for conference concerning its work and welfare. The Pan-Presbyterian C. is composed of delegates from Presbyterian bodies throughout the world, and meets for conference on matters of general interest to the denomination. In the Reformed Episcopal church, each parish, in addition to the vestry which has direction of its temporal affairs, has a C., chosen by communicants, that holds an advisory relation to the pastor, and is associated with him in the reception, discipline, and dismissal of members. The synodical C. is composed of delegates from a certain number of parishes; and the general C., representing the whole denomination, is clothed with supreme legislative authority.

COUNCIL BLUFFS, a city in Pottawottamie co., Iowa, on the Missouri river, 120 m. above Des Moines, and 1000 m. above St. Louis, on the Union Pacific and five other railroads; and connected by ferry and bridges with Omaha, Neb.; pop. '70, 10,020. The new bridge over the Missouri is over half a mile long and 50 ft. above high water, and is intended for railroad trains as well as ordinary travel. The city is nearly three m. from the river at the foot of the bluffs, a high and precipitous ridge. It is on a square, 6 by 4 m., making 24 sq. miles. It is well laid out in rectangular blocks, and finely built, chiefly of brick. The noteworthy buildings are the county court house, the city hall, high-school, and two public halls. There are many important manufactories, churches, and schools, and near by is the state deaf and dumb institution. It was a Mormon settlement in 1846, and was chartered as a city in 1853. The name is in memory of a council held with the Indians by the explorers, Lewis and Clarke, in the early part of the century.

COUNTER-MARK, a stamp sometimes found on ancient coins, or medals, usually an inscription or a figure, and supposed to show that the article was captured from an enemy.

COUNTY (*ante*), a common, in fact universal political division in the various states of the American union (except in Louisiana, where the similar division is called a "parish"). For purposes of local government, each county has at least one court and one prison, and usually an almshouse. The smaller divisions are townships, from three or four to a dozen or more in a county; and the supervisors of these towns, chosen by popular suffrage, form an administrative board to conduct the financial and other county affairs. In all the United States there are now nearly 3,500 counties. Usually each county chooses one or more members to the lower house of the state legislature. In some cities, such as New York, wards, or special election districts, answer for townships, and the boards of common council have the powers of supervisors.

COUNTY COURTS (*ante*). In the United States there is a regular court in each county, possessing the usual jurisdiction, and presided over by a judge elected by the people or appointed by the governor and senate. In New York, the judges are elected for four years. The courts have original civil jurisdiction only in cases where money or personal property not exceeding \$100 in amount is demanded; and jurisdiction also in the foreclosure of mortgages on real estate, and the collection of what may be due after the sale of the property; the partition of real estate in the county; admeasurement of dower; management of the property of infants; mortgage and sale of the property of religious corporations, etc. The county courts have also supervisions of an appellate jurisdiction from decisions of justices of the peace. In counties that have a population of less than 40,000 the county judge acts as surrogate.

COURAYER, PIERRE FRANCOIS DE, 1681-1776; a Roman Catholic writer on theology, a native of Normandy. He published a work *On the Validity of English Ordinations*, in which he endeavored to prove that there had been no break in the line of ordination from the apostles to the English clergy. He was persecuted in France for his opinions, and fled to England. In 1736, he published a French translation of Sarpi's *History of the Council of Trent*, and afterwards a translation of Sleidan's *History of the Reformation*.

COURBET, GUSTAVE, 1819-77; a French painter. He began to study law in 1859, but having a strong liking for art, he took lessons and studied the old masters, working privately for several years with little success. After the revolution of 1848, he began to be appreciated, and rapidly acquired fame. In 1871, he was an active leader of the commune, and directed the demolition of the Vendome column. When the commune failed he was caught and tried for treason, but was awarded only six months' imprisonment. Two years later he was prosecuted for destroying the Vendome column, and his effects were seized and sold. He was noted for studies of the nude female form.

COURLAN, *Aramus scolopaceus*, a wading fowl, the only one of its family. It is more than 2 ft. in length, with broad rounded wings, and cleft toes; the color usually chocolate brown streaked with white. It runs rapidly, but its flight is weak and short. Its note is between a squeak and a cackle. Its home is in Florida and the West Indies.

COURT, ANTOINE, 1696-1760; called the "Restorer of Protestantism in France;" born of peasant parents, adherents of the reformed church, which was then undergoing

cruel persecution. Court was 8 years old when the Camisard revolt was suppressed, and 19 when the infamous decree of Louis XIV. was published, declaring that all who professed the reformed faith should be punished as relapsed heretics. When but 17 years old, Court began to speak at the secret meetings of the Protestants, held literally "in dens and caves of the earth," and often in darkness, with no pastor present to teach or counsel. He entertained a great desire to build up the church so ruthlessly persecuted; and to this end he proposed four things: 1. Regular religious meetings for teaching and worship; 2. Suppression of the fanaticism of those who professed to be inspired, and of the consequent disorders; 3. Restoration of discipline by the establishment of consistories, conferences, and synods; and 4. The careful training of a body of pastors. To the exercise of this great task he devoted his life. From audiences of half a dozen trembling in secret, he came to address openly 10,000 at one time. In 1721, further fury was hurled at the Protestants in a decree which assumed that there were no Protestants in France, and prohibiting the most secret exercise of the reformed religion. A price was set on Court's head, and in 1730 he fled to Lausanne. There, after immense exertion, he founded a college for the education of clergy, of which, during the remaining 30 years of his life, he was the chief director. This college sent forth all the pastors of the reformed church of France until the close of the 18th century. Court intended to write a history of Protestantism, and made extensive collections for the purpose: but he did not live to do the work. He was the father of the more widely known Court de Gibelin.

COURT, in law, in the United States, a body in the government to which the public administration of justice is delegated. The presence of a sufficient number of the members of such a body regularly convened in an authorized place at an appointed time, engaged in the full and regular performance of its functions, is a court. Courts are said to belong to one or more of the following classes, according to the nature and extent of jurisdiction and proceedings, and the principles on which they administer justice: admiralty, appellate, central, civil, criminal, ecclesiastical, equity, general jurisdiction, inferior, law, limited jurisdiction, local, martial, not of record, original jurisdiction, of record, superior, supreme, and in some states there are other classifications.

COURT-MARTIAL (*ante*), in the United States, composed of not less than thirteen commissioned officers of suitable rank. Regimental courts-martial, having jurisdiction of minor offenses, consists of not less than three commissioned officers; garrison courts-martial are similarly constituted. A general court-martial for the army can be held only on the order of the president, or the general of the army, or an officer commanding a separate department. For the navy, a court-martial must be ordered by the president, the secretary of the navy, the commander of a fleet, or the commander of a squadron beyond United States jurisdiction.

COURT OF LOVE, an outgrowth of the extreme romance of the age of chivalry. Such a court was to decide in matters of courtesy and etiquette, particularly in affairs where love was or might be concerned. It was composed of women of high birth and position. There was a code (still preserved) of 31 articles, in accordance with which decisions were made. Here is a specimen of the important questions passed upon: "A lady listened to one admirer, pressed the hand of another, and touched with her toe the foot of a third. Which of those three was the favored suitor?" To the great annoyance of mankind, the decision has never been known. Among the eminent presiding divinities of these courts were the countess de Die called the Sappho of her age, and Laura de Sade, who was celebrated by Petrarch. René, king of Anjou; and Richelieu, the great cardinal, made ineffectual efforts to resuscitate these courts.

COURTOIS, JACQUES and GUILLAUME, 1621-76; brothers and painters, natives of France, and sons of a painter; both educated in Italy under Guido and other celebrated masters. Jacques excelled in battle pieces. Late in life he joined the Jesuits and took orders, but still continued his artistic work. Guillaume also excelled in battle pieces, adding thereto many religious compositions.

COUSCOUS, or SPOTTED PHALANGER, a marsupial animal about the size of the domestic cat, black and white with brown spots. It has a prehensile tail. It is found in the Spice islands, and sought for both its fur and its flesh. It is sometimes called the *shamshum*.

COUSTOU, NICOLAS, 1658-1738; son of a wood-carver of Lyons, who became rector and chancellor of the academy of painting and sculpture in Paris. He was remarkable as a painter. Some of his works are the "Union of the Seine and the Marne," the "Bergen Chasseur;" and the "Descent from the Cross," behind the choir of Notre Dame.

COUTTS. See BURDETT-COUTTS, *ante*.

COUTURE, THOMAS, b. 1815; a French painter, pupil of Delaroche. His first noteworthy work was "The Love of Gold." In 1847, he greatly enhanced his reputation by the "Romans of the Decadence," which secured for him the cross of the legion of honor. He has taught many pupils, and has had great influence over contemporary art.

COVENANT (*ante*), in law there is a great variety of covenants, for almost any agreement may fall under that designation. There are affirmative covenants; covenants against incumbrances; alternative, auxiliary, collateral, concurrent, declaratory, dependent, disjunctive, executed, executory, and express covenants; also, covenants for further assistance; covenants for quiet enjoyment; covenants for title; implied covenants; covenants in deed and in law; illegal covenants; independent covenants; and inherent, intransitive, joint, negative, and obligatory covenants; also, covenants of right to convey; of seisin, of warranty, and personal covenants. There need be no particular form in a covenant.

COVENANTERS. See CAMERONIANS, and COVENANTS, *ante*; and REFORMED PRESBYTERIANS.

COVENTRY, a t. in Kent co., R. I., on the Pawtuxet river and Hartford, Providence and Fishkill railroad; pop. '70, 4,349. The main business is the manufacture of cotton goods, plain and printed, of mouseline-de-laines, and machinery.

COVINGTON, a co. in s. Alabama, on the Florida border, drained by Yellow-water and Conecuh rivers; 1200 sq.m.; pop. '70, 4,868—599 colored. It is level, and the soil is sandy and poor. Pine timber is the main product. Co. seat, Andalusia.

COVINGTON, a co. in s. Mississippi, watered by the tributaries of Leaf river; 680 sq.m.; pop. '70, 4,753—1547 colored. Soil, light and sandy; chief productions, corn, cotton, and sweet potatoes. Co. seat, Williamsburg.

COVINGTON (*ante*), a city in Kenton co., Ky., at the junction of the Licking with the Ohio river, opposite to Cincinnati, O., with which it is connected by a bridge and by ferries. It is substantially a suburb of the city in Ohio, as Brooklyn is of New York, and its growth has been in equal degree with the chief city. The bridge (wire suspension) was finished in 1867, and cost \$2,000,000; the main span is 1657 ft., and the height above low-water is 100 ft. There is also a wire suspension bridge, over the Licking, to Newport. From Covington starts important railroad communication with s.w. states. Besides general trade, the city has a large manufacturing business. Covington was founded in 1812, and incorporated in 1834. Its population in 1870 was 24,505—1114 colored. There is a large foreign population, most of whom are Germans.

COW-BIRD, or COW-BUNTING. See COW-PEN BIRD, *ante*.

COWETA, a co. in n.w. Georgia, intersected by the Atlanta and West Point railroad, and bounded on the n.w. by Chattahoochee; 378 sq.m.; pop. '70, 15,875—8,019 colored. The surface is even and the soil fertile, producing corn, wheat, cotton, etc. Co. seat, Newman.

COWL, a hood generally attached to a loose cloak and worn on the head. It was common in England in the middle ages, but has come to be used chiefly by monks or members of some religious order, such as the Benedictines and Franciscans.

COWLEY, a co. in s.e. Kansas, bordering on the Indian territory, bounded on the w. by the Arkansas river; 804 sq.m.; pop. '70, 1175. Agriculture is the chief business. Co. seat, Winfield.

COWLITZ, a co. in s.e. Washington territory on the Columbia river, which separates it from Oregon; 460 sq.m.; pop. '70, 730. It is mountainous but fertile, and as yet little settled. Co. seat, Freeport.

COWPENS, a village in Spartanburg co., S. C., near the n. border of the state. The place is noted chiefly for a battle there Jan. 17, 1781, between the British under col. Tarleton and the Americans led by gen. Morgan, in which the former were defeated, losing 300 killed and wounded and 500 prisoners. The Americans had only 12 killed and 60 wounded.

COWPER, WILLIAM, Earl, 1664—1723; an English lawyer and judge, member of parliament, and lord keeper of the great seal. In 1706, he was made a peer, and was one of the commissioners to negotiate the union of Scotland with England. In 1707, he was lord chancellor; in 1716, lord high steward; and earl in 1718.

COWPER'S GLANDS, two small yellow lobulated glands in man under the membranous portion of the urethra. They secrete a mucus which flows into the bulb of the urethra. In woman, the vulvo-vaginal glands are analogous.

COW-TREE (*ante*), the name of several trees native in the tropics, whose sap is used as a substitute for milk. The cow-tree of the Cordilleras grows in rocky places 3,000 ft. above tide. For the greater part of the year its branches appear to be dead, but when the trunk is pierced it yields a copious stream of sweet and nourishing juice much resembling milk. It has a pleasant odor and is somewhat viscid. It soon turns yellow, and cream rises to the surface. It is much used by negroes and Indians, who go at sunrise to gather it, as then the sap flows most abundantly.

COX, DAVID, 1793—1859; an English painter excelling in landscapes. In 1814, he published a *Treatise on Landscape Painting in Water Colors*, still accepted as authority.

COX, JACOB DOLSON, b. Canada, 1828. He studied law in New York, and afterwards at Oberlin college, Ohio, in which state he was admitted to the bar in 1852. In 1859, he was elected to the legislature. In the war of the rebellion he was active on the

union side, rising to be maj.gen. of volunteers. In 1866, he was elected governor of Ohio, and in 1869, he was appointed secretary of the interior, but resigned the next year.

COX, RICHARD, 1499-1581; b. Buckinghamshire, England; educated at Eton and Cambridge. Welsey invited Cox to Oxford, but he had adopted the reformed ideas, and the cardinal gave him imprisonment instead of preferment. He was afterwards master of Eton school and prebendary of Ely cathedral. He was tutor to prince Edward, and when the latter became king, he made Cox one of the privy council and king's almoner. Mary put him in prison, but he escaped to Strasburg, where he lived with Peter Martyr. Elizabeth restored him to the see of Ely. Cox translated for the Bishops' Bible the four Gospels, the Acts, and the Epistle to the Romans, and wrote a number of polemical essays. He was distinguished for the violence of the measures which he recommended for the extirpation of popery and dissent.

COX, SAMUEL HANSON, D.D., LL.D., b. N. J., 1793, of a Quaker family. He began to study law, but left it for theology, and was ordained a Presbyterian minister in 1817. Three years later he had charge of a church in New York city, and was mobbed on account of his anti-slavery sentiments, his house and church being sacked. In 1834, he was chosen professor of sacred rhetoric in the theological seminary at Auburn, N. Y., and in 1837, became pastor of the First Presbyterian church in Brooklyn, remaining there until 1854. He was, in the mean time, professor of ecclesiastical history in Union theological seminary. At the division of the Presbyterian church, 1837, he became a leader in the new school branch, and was on several occasions a delegate to conventions in Europe, and at one time moderator of the general assembly. In 1854, his voice failed, and he resigned his pastorate. Among his published works are: *Quakerism not Christianity; Interviews, Memorable and Useful*; and many discourses.

COX, SAMUEL SULLIVAN, b. Ohio, 1824. He is a graduate of Brown university, and was a lawyer and editor in Ohio. He has traveled in Europe, and was appointed secretary of legation in Peru. In 1856-62, he was a representative in congress from Ohio. In 1866, he removed to New York, was reelected to congress, and is still a member of the house of representatives (1880). He has published *The Buckeye Abroad; Eight Years in Congress; Search for Winter Sunbeams; Why we Laugh*; and some speeches.

COXAL'GIA, or COXI'TIS, commonly called the "hip-joint disease." It is usually a severe inflammation in the joint, extending to the ligaments and surrounding soft substances. The form in which it oftenest appears in young persons is inflammation of the membraneous lining, and it frequently originates from rheumatism. In children it is sometimes started by a blow or a fall. Lymphatic and scrofulous persons are most subject to it.

COXCIE, or COXIS, MICHAEL, 1499-1592; a Flemish painter, known by his copy of the "Adoration of the Lamb," from the original, made by the brothers Van Eyck, for Philip II. of Spain, at a cost of two years' work. His illustrations of the story of "Cupid and Psyche" have furnished models for innumerable paintings and engravings.

COXE, ARTHUR CLEVELAND D.D., b. 1818, in N. J.; a son of Samuel Hanson Coxe. He graduated at the university of New York in 1838, took orders in the Protestant Episcopal church, and officiated as pastor in New Jersey, Connecticut, Maryland, and New York. In 1865, he was chosen bishop of western New York, in which office he has shown earnestness and zeal. He is widely known as a writer, and among his works are some volumes of poems; *Sermons or Doctrinal Duty; Christian Ballads; Impressions of England*; and *Moral Reforms Suggested in a Pastoral Letter*.

COYOTE. See WOLF, *ante*.

COZZENS, FREDERICK SWARTWOUT, 1818-69; b. N. Y.; in early life a wine-merchant, and editor of the *Wine Press*, for which he wrote papers on the culture of the grape and the manufacture of wine. This led him to more popular authorship, and he contributed to magazines. His first volume was *Prismatics*, by Richard Haygarde. Then came the *Sparrowgrass Papers*, his best effort. Afterwards he published *Acadia, or a Sojourn among the Blue Noses*; and a *Memorial of Fitz-Hugh Halleck*. One of his latest and best works is *Sayings, Wise and Otherwise*.

CRAB APPLE. See APPLE, *ante*.

CRABB, GEORGE, 1778-1854; an English lawyer and philologist, a graduate of Oxford, author of text books on language and a *History of English Law*, but known chiefly by his valuable book on *English Synonyms*.

CRA'BRO, hymenopterous insects of the section *aculeata*, and the sub-section *fossorers*, or "burrowers," a creature of the hornet family which excavates nests in decayed wood, fences, etc.

CRAFTS, SAMUEL CHANDLER, 1768-1853; b. Conn.; graduated at Harvard. When young he removed to Vermont, where he filled civil offices of various degrees up to governor of the state. In 1842, he became U. S. senator to fill a vacancy.

CRAIG, a co. in s.w. Virginia, on the West Virginia border, e. of the Alleghanies; 250 sq. m.; pop. '70, 2,942—230 colored. The surface is rough, but the valleys are fertile. Agriculture is the main business. Co. seat, New Castle.

CRAIGHEAD, a co. in n.e. Arkansas, bounded on the e. by the St. Francis river and lake; 950 sq. m.; pop. '70, 4,577—253 colored. Chief productions, corn, cotton, and tobacco. Co. seat, Jonesboro.

CRAIK, DINAH MARIA MULOCK, b. 1826; an English authoress, chiefly of works of fiction; the daughter of a clergyman. In 1849, she published *The Ogilvies*, her first novel, and rapidly afterwards, *Olive*; *The Head of the Family*; *Alice Learmont*; *Agatha's Husband*; *John Halifax, Gentleman* (a wonderful success); *A Life for a Life*; *Christian's Mistake*; *Two Marriages*; *A Noble Life*; *The Unkind Word*; *Fair France*; and a great number of short papers. In 1865, she married George Lillie Craik. Among her latest works are *Sermons out of Church*, and *Life and Remains of John Martin, Schoolmaster and Poet*.

CRAIK, JAMES, 1731-1814; a native of Scotland, family physician to George Washington. He accompanied Washington in the Braddock expedition, and subsequently entered the medical service of the revolutionary army, being director of the hospital at Yorktown. After the war he settled near Mt. Vernon, and attended Washington until his (Washington's) death.

CRAMER, JOHN BAPTIST, 1771-1858; a German composer of music, who passed the most of his life in London. His work is esteemed for simplicity of construction, grace, and beauty.

CRANCH, CHRISTOPHER PEARSE, b. Va., 1813; graduated from Columbian college, Washington; in 1831, studied in the divinity school of Harvard university, and was licensed to preach; but he turned his attention to landscape painting. He has spent many years in Europe, but when at home usually resides in or near New York. Besides producing a great number of landscape paintings, he has written much for current magazines, and has published tales for children, and a volume of poems. He is a son of judge William Cranch.

CRANCH, WILLIAM, LL.D., 1768-1855; b. Mass.; graduate of Harvard, and bred to the bar, being admitted in 1790. In 1801, he was appointed a justice of the United States circuit court for the district of Columbia, and in 1805, he was promoted to chief-justice, which position he held all his life. His reports of the decisions of his own court and of the United States supreme court are widely known.

CRANSTON, a t. in Rhode Island, on the Providence, Hartford, and Fishkill railroad; 4 m. s. of Providence; pop. '70, 4,822. The people are largely engaged in the manufacture of cotton and machinery.

CRANWORTH, ROBERT MONSEY ROLFE, Baron, 1790-1868; an English jurist, educated at Cambridge and called to the bar in 1816. He was in parliament from 1832 to 1839, and at the same time solicitor-general. In 1850 he was made vice-chancellor, and in 1865-66 again held the same office.

CRATERUS, a gen. of Alexander the great, killed in battle with Eumenes 321 B.C., two years after Alexander's death. On the division of the empire, Craterus and Antipater received jointly the government of Macedonia, Greece, Illyria, and Epirus, Antipater taking command of the military forces, and Craterus attending to civil affairs.

CRA TES, an Athenian actor and writer of comedies in the 5th c. B.C. His plays were remarkable for not depending on political points for success, as had been common; and he was the first one to introduce a drunken character on the stage, where the inebriate individual has since remained as a frequent feature.

CRA TES, a cynic philosopher of Thebes, of the 4th c. B.C., a pupil of Diogenes, rivaling even his master in cynicism. His large fortune he placed in charge of a banker, with orders that if his sons should turn out to be fools the property should go to them; but if they should become philosophers it should be given to the poor. Crates wrote a number of philosophical letters.

CRA TES, a Greek grammarian and stoic philosopher of the 2d c. B.C., leader of a literary school, and chief of the library of Pergamus. Little is known of his life except the event of his visiting Rome 157 B.C., as ambassador of Attalus II., king of Pergamus, which event led him to study Latin grammar. He wrote on agriculture, geography, and a treatise on the Attic dialect.

CRAVEN, a co. in s.e. North Carolina, bordering on Pamlico sound, and intersected by the Neuse river and the Atlantic and North Carolina railroad; 1000 sq. m.; pop. '70, 20,516—12,116 colored. It is low and swampy, and covered to a great extent with pine forests, the lumber from which constitutes the chief article of trade. Other productions are corn, cotton, rice, and sweet potatoes. Co. seat, Newbern.

CRAVEN, THOMAS T., b. N. H., 1808; entered the navy as midshipman in 1822, rising through the various stages to rear-admiral in 1866. He was engaged in the capture of New Orleans, and with the batteries at Vicksburg.

CRAWFORD, a co. in w. Arkansas, on the border of the Indian territory bounded s. by Arkansas river; 585 sq.m.; pop. '70, 8,957—988 colored. Surface mountainous; coal and some minerals are found. The productions are corn, cotton, and molasses. Co. seat, Van Buren.

CRAWFORD, a co. in s.w. Georgia, on Flint river, intersected by the Southwestern railroad; 289 sq.m.; pop. '70, 7,557—4,273 colored. The surface is uneven, with moderately fertile soil, producing cotton, sweet potatoes, etc. Co. seat, Knoxville.

CRAWFORD, a co. in s.e. Illinois, separated from Indiana by the Wabash river, and drained in part by the Embarras; 420 sq.m.; pop. '70, 13,839. The surface is chiefly prairie, and fertile, producing wheat, corn, tobacco, sorghum, etc. Co. seat, Robinson.

CRAWFORD, a co. in s. Indiana, bordering on the Ohio river, and watered by the Little Blue; 280 sq.m.; pop. '70, 9,851. The valleys are fertile, but the uplands are mostly sterile. Coal, iron, and limestone are found; lumber, pork, and beef, are exported. Co. seat, Leavenworth.

CRAWFORD, a co. in w. Iowa, intersected by Boyer river, and the Chicago and Northwestern railroad; 700 sq.m.; pop. '70, 2,530. The soil is productive; grain and wool are the main productions. Co. seat, Denison.

CRAWFORD, a co. in s.e. Kansas, on the Missouri border, watered by the head streams of Neosho river, and intersected by the Missouri River, Fort Scott and Gulf railroad; 504 sq.m.; pop. '70, 8,160. The productions are chiefly agricultural. Co. seat, Girard.

CRAWFORD, a co. in Michigan on the upper waters of Au Sable river; 620 sq.m.; very little settled.

CRAWFORD, a co. in s.e. Missouri, intersected by the Maramee river and the Atlantic and Pacific railroad; 600 sq.m.; pop. '70, 7,982—86 colored. It has a diversified surface, and is rich in minerals, of which the chief are copper, iron, and lead. Co. seat, Steelville.

CRAWFORD, a co. in n. central Ohio, watered by the head streams of Sandusky river, and intersected by the Pittsburg, Fort Wayne, and Chicago railroad; 412 sq.m.; pop. '70, 25,556. The surface is level, and the soil fertile. Chief productions, wheat, corn, oats, butter, and wool. Co. seat, Bucyrus.

CRAWFORD, a co. in n.w. Pennsylvania on the Ohio border, watered by Venango river, and intersected by the Beaver and Erie canal, the Oil Creek and Alleghany River railroad, the Atlantic and Great Western, and the Erie and Pittsburg railroads; 975 sq.m.; pop. '70, 63,832. It is a good agricultural region, although lumber is still an important article of export. The chief productions are wheat, rye, corn, oats, buckwheat, potatoes, hay, cheese, butter, wool, maple sugar, and hops. Co. seat, Meadville.

CRAWFORD, a co. in s.w. Wisconsin, on the Mississippi river, bounded s. by the Wisconsin, and intersected by Kickapoo river and the Milwaukee and St. Paul railroad; 612 sq.m.; pop. '70, 13,075. Surface partly prairie and partly hilly; productions agricultural. Co. seat, Prairie du Chien.

CRAWFORD, NATHANIEL MACON, D.D., 1811-71; b. Ga.; graduated at Franklin university. He studied law, and was admitted to the bar, but never practiced. In 1847, he was chosen professor of mathematics in Oglethorpe university; licensed to preach in 1843, and ordained the next year, becoming pastor of a Baptist church. In 1847, he was chosen professor of biblical literature in Mercer university, and in 1854 he became president of that institution. In later years he filled chairs in the Western Baptist theological seminary and the university of Mississippi, returning to the presidency of Mercer university in 1858. A year later he was chosen president of the Bible revision association. He published *Christian Paradoxes*.

CRAWFORD, SAMUEL WYLIE, b. Pa., 1829; appointed assistant surgeon in the federal army, 1851. In the war of the rebellion he served as an officer on the union side, rising to brevet-maj.gen. He was one of the garrison of fort Sumter. In 1873, he retired from active service on account of wounds.

CRAWFORD, THOMAS, 1814-57; an American sculptor; b. New York. At the age of 22 he went to Rome and became a pupil of Thorwaldsen. The first work which brought him prominently into notice was his "Orpheus entering Hades in Search of Eurydice," finished 1839. This was followed by other poetical compositions, such as "Babes in the Wood," "Flora," "Hebe and Ganymede," "Sappho," "The Dancers," and "The Hunter." Among his works are a bust of Josiah Quincy; a statue of Washington at Richmond, Va.; of Beethoven, in the Boston music hall; of Dr. Channing; of Henry Clay; and the colossal figure of "Liberty" (in armor) for the capitol at Washington. For this building he also executed the pediment and bronze doors. During his later years he suffered from tumor of the brain, which deprived him of sight, so that he was compelled to leave many works unfinished.

CRAWFORD, WILLIAM HARRIS, 1772-1834; b. Va., but removed with his family to Georgia when a child. He was self-educated, and in 1798 was admitted to the bar. In 1802, he was chosen a member of the state senate, in which body he presented a resolution, which was adopted by both houses of the legislature, requesting Mr. Jefferson to permit his name to be used as a candidate for a third term of the presidency. In 1807, he was chosen to fill a vacancy in the United States senate. During the canvass, he fought two duels, killed one man, and was wounded in the next venture. He was re-elected to the senate in 1811, and in 1812 was chosen president *pro tempore* when George Clinton, the vice-president, was disabled by sickness. He at first opposed, but finally supported the war with England. In 1813, he was appointed minister to France, where he became one of La Fayette's friends. In 1815, he was made secretary of war, and the next year secretary of the treasury. Crawford thought himself entitled to succeed Monroe as president, and was nominated by a congressional caucus, which was then the regular way; but this caucus system had grown odious, and there were four other candidates against him, Calhoun, Adams, Jackson, and Clay. Calhoun was pacified with the vice-presidency, to which he was chosen by 182 out of 261 votes. There was no choice for president, the vote being: Jackson, 99; J. Q. Adams, 84; Crawford, 41; Clay, 37. About the time of the election, Crawford was stricken with paralysis, a disease from which he never recovered. His condition rendered it impossible to consider him a candidate when the election came to be decided in the house of representatives, although even in such a condition he got four of the 24 votes. From this time Crawford was out of the political field. In his own state, he was made a judge, filling the office until his death.

CRAWFORDSVILLE, a city in Montgomery co., Indiana, 44 m. n.w. of Indianapolis, reached by several railroads; pop. '70, 3,701. The city is in a fine agricultural region, and is the seat of Wabash college, a large educational institution under the care of the Presbyterians.

CREATIONISM, a term recently applied to that theory of the origin of man which is thought to be opposed to evolutionism (see ANTHROPOLOGY, EVOLUTION). C., however, has for centuries been used to indicate a theory as to the origin of the soul. The question in theology has been, whether the soul of each man is immediately created by God, or is generated by the parents as really as is the body. The former theory is called *creationism*; the latter, *traducianism*. The following arguments are advanced by traducianists: 1. The Scripture declaration that "Adam begat a son in his own likeness, after his image." Concerning this son, they affirm that, as he consisted of body and soul, these must both have been in the image and likeness of his father, and both must have been derived, mediately, from him. 2. The advocates of this theory affirm that it is necessary in order to account for the transmission of a sinful nature from Adam to his posterity. Community of essence, they say, produces community in sin. If mankind were not in Adam as to essence, they did not sin in him, and do not derive their corrupt nature from him; but if they were in him as to essence, then his sin was their sin. 3. Some urge also that the incarnation of Christ involves the truth of the traducian theory. He was born of a woman. Unless both his human soul and his body were derived, mediately, from his virgin mother, he cannot truly be of the same race with mankind. 4. Another argument is drawn from the transmission from one generation to another of ethnical, national, family, and parental peculiarities of mind, temper, and disposition, as well as of physical constitution. On the other hand, in behalf of C.—the theory that every human soul is created by the immediate agency of God—the following arguments are maintained: 1. That it is in accordance with the general teaching of Scripture. In the account of the creation of man, there is, they say, a marked distinction between the origin of the body and of the soul. The one is, mediately, from the earth; the other, immediately, from God; and this distinction is continued through the Bible. The body and soul are not only represented as different substances, but also as having a different origin: "The dust shall return to the earth as it was, and the spirit shall return unto God who gave it." God is called "the God of the spirits of all flesh," and "the Father of spirits." 2. C., it is said, is more consistent with the nature of the soul which, being immaterial and spiritual, must be indivisible. The traducian theory, on the contrary, implies that the essence of the soul is capable of division. Some of its advocates, indeed, deny that there is any division; but the great majority of them admit that the derivation of one soul from another requires a division of essence. 3. The advocates of C. think they have an argument for it in the very teaching of Scripture concerning the person of Christ to which their opponents resort. He assumed our nature by taking to himself a true body and a rational soul. He was born of a woman; in his human nature, he was the son of David, and was descended from the fathers. As such, the advocates of both theories admit, he was without sin. But if, as traducianism affirms, mankind derive a sinful nature from Adam because of their community of essence with him, then C. replies that the human nature of Christ, sharing the same community of essence, must also have shared in the sinfulness. While these two theories are generally arrayed in opposition, as if one or the other must be true, it is conceivable that there is a truth in both. Many theologians do not affirm either; but, regarding the mode of the soul's coming into being as a part

of the mystery which envelops the whole subject of the existence, maintenance, and transmission of life, are content to say with Augustine, "When I wrote my former book I did not know how the soul derives its being, and I do not know now." See *TRADUCIANISM*, *ante*.

CREDIT MOBILIER OF AMERICA, the name of an organization chartered in Pennsylvania in 1859, as a corporation for a general loan and contract business. It was organized in 1863 with a capital of \$2,500,000; and in 1867, the charter having been purchased by a company formed for the construction of the Union Pacific railroad, the stock was increased to \$3,750,000, and soon afterwards rose to great value, paying enormous dividends. It was charged in 1872, that a number of senators and members of congress were privately owners of the stock, and a congressional investigation was ordered, whose result showed that in some cases the charges were well founded. There was no law to prevent such ownership; but as the building of the railroad was greatly assisted by grants of land made by congress, it was considered at the least highly improper for any member to have a pecuniary interest in such a concern. The senate committee reported the innocence of several who had been accused, and recommended the expulsion of one senator; but no action was taken. In the house, resolutions censuring two members were adopted. It became evident, on the whole, that the charges, though not without some basis, had been applied so promiscuously as to involve some men absolutely free from offense.

CREEDMOOR, a station on the Long Island railroad, 11 m. e. of New York, where there is the largest and most complete rifle range in the United States. It is much frequented by riflemen for target practice.

CREEKS, a nation of Indians originally living in Alabama and Georgia. During the revolutionary war they adhered to the English, and were hostile to the colonists even after peace. But in 1790, they made a treaty with the federal government, in which nearly a dozen other nations or tribes joined. They again supported the British in the war of 1812, and perpetrated a number of outrages, the most important of which was the massacre of 400 men, women, and children at fort Mimms. Unsparing war was made upon them by gen. Jackson and other leaders, and in Mar., 1814, they were completely crushed. They had lost 2,000 warriors, and their country had been desolated. Still, there was trouble with them almost constantly until, in 1836 they were removed to the present Indian territory. The whole number removed was 24,504. They resisted all efforts of missionaries and teachers, and it was not until 1843 that the first school was established among them. In 1857, they numbered only 14,188. In the war of the rebellion, they were about equally divided. They defeated the confederates in two small engagements; but in a third they were routed, and more than 6,000, men, women, and children fled to Kansas. In 1872, their number was estimated at 12,000, and they had 34 schools. The governmental system of these Indians is peculiar. Each town is independent of all others, and is ruled by its own elective king, the next officer being the chief warrior. The number of chiefs became so oppressive that a change was made, and, in 1863, a plan was adopted to choose a first and second chief, a house of warriors and a house of kings. In 1869, the fugitives of the tribe were returned to their nation.

CREMATION, the burning of human corpses, appears to have been a general practice in early times, with three exceptions: Egypt, where they were embalmed; Judea, where they were laid away in sepulchers; and China, where they were buried in the earth. In Greece, suicides, children not yet having teeth, and persons struck by lightning, were denied the right to be buried. At Rome, burning was the rule down to the end of the 4th c. after Christ. Whether in any of these cases cremation was adopted or rejected for sanitary or religious reasons, it is difficult to say. Embalming would probably not succeed in climates less warm and dry than that of Egypt; the scarcity of fuel might also be a consideration. The Chinese are influenced by the doctrine of Feng Shui, or incomprehensible wind water; they must have a properly placed grave in their own land, and with this view corpses are often sent home from California. Even the Jews used cremation in the vale of Tophet when a plague came; and the modern Jews of Berlin and the Spanish and Portuguese Jews at Mile-End cemetery have been among the first to welcome the lately revived process. Probably, also, some nations had religious objections to the pollution of the sacred principle of fire, and therefore practiced exposure, suspension, throwing into the sea, cave-burial, desiccation, or envelopment. Some at least of these methods must obviously have been suggested simply by the readiest means at hand. Cremation is still practiced over a great part of Asia and America, but not always in the same form. Thus, the ashes may be stored in urns, or buried in the earth, or thrown to the wind, or (as among the Digger Indians) smeared with gum on the heads of the mourners. In one case the three processes of embalming, burning, and burying are employed; and in another, if a member of the tribe die at a great distance from home, some of his money and clothes are nevertheless burned by the family. As food, weapons, etc., are sometimes buried with the body, so they are sometimes burned with the body, the whole ashes being collected. The Siamese have a singular institution, according to which, before burning, the embalmed body lies in a temple for a period determined by the rank of the dead man—the king for six months, and so downwards. If the poor relations cannot afford fuel and other necessary preparations, they

bury the body, but exhume it for burning when an opportunity occurs. There can be little doubt that the practice of cremation in modern Europe was at first stopped, and has since been prevented in great measure, by views which had become associated with the Christian doctrine of the resurrection of the body; partly also by the notion that the Christian's body was redeemed and purified. Science has shown that burning merely produces quickly what putrefaction takes a long time to accomplish; but the feeling of opposition still lingers among the clergy of more than one nation. Some clergymen, however, as Mr. Haweis in his *Ashes to Ashes, a Cremation Prelude*, have been prominent in the reforming movement. The objection was disposed of by Lord Shaftesbury when he asked, "What would in such a case become of the blessed martyrs?" The very general practice of burying bodies in the precincts of a church, in order that the dead might take benefit from the prayers of persons resorting to the church, and the religious ceremony which precedes both European burials and Asiatic cremations, have given the question a religious aspect. It is really a sanitary one. The disgusting results of pit-burial made cemeteries necessary. But the cemeteries are equally liable to overcrowding, and are often nearer to inhabited houses than the old church-yards. There is indeed a disposition to build villas near ornamental cemeteries. It is possible to make a cemetery safe approximately, by selecting a soil which is dry, close, and porous, by careful drainage, and by rigid enforcement of the rules prescribing a certain depth (8 to 10 ft.) and a certain superficies (4 yards) for graves. But one has only to read such a work as *Baker's Loves Relating to Burial* to see how many dangers burial legislation has to contend with. A certain amount of irrespirable gas will escape into the air, or into sewage drains, and thus reach houses, or corrupt material will percolate so as to contaminate water which is afterwards used. The great Paris cemeteries inflict headache, diarrhea, and ulcerated sore throat on their immediate neighbors; and a great mass of similar well-authenticated facts may be brought against even recent cemeteries in various countries. A dense clay, the best soil for preventing the levitation of gas, is the worst for decomposition. The danger is strikingly illustrated in the careful planting of trees and shrubs to absorb the carbonic acid. Vault-burial in metallic coffins, even when saw-dust charcoal is used, is still more dangerous than ordinary burial. It must always be remembered that the cemetery system can only be temporary. The soil is gradually filled with bones; houses crowd around; the law itself (in England) permits the re-opening of graves at the expiry of 14 years. We shall not, indeed, as Browne says, "be knaved out of our graves to have our skulls made drinking bowls, and our bones turned into pipes." But on this ground of sentiment, cremation would certainly prevent any interruption of that "sweet sleep and calm rest" which the old prayer that the earth might lie lightly has associated with the grave. And in the meantime we should escape the horrors of putrefaction and of the "small cold worm that fretteth the enshrouded form." For the last 10 years many distinguished physicians and chemists in Italy have warmly advocated the general adoption of cremation, and in 1874, a congress called to consider the matter at Milan resolved to petition the chambers of deputies for a clause in the new sanitary code, permitting cremation under the supervision of the syndics of the commune. In Switzerland, Dr. Vegmann Ercolani is the champion of the cause, and there are two associations for its support. So long ago as 1797, cremation was seriously discussed by the French assembly under the directory, and the events of the Franco-Prussian war have again brought the subject under the notice of the medical press and the sanitary authorities. The military experiments at Sedan, Chalons, and Metz, of burying large numbers of bodies with quicklime, or pitch and straw, were not successful, but very dangerous. The question was considered by the municipal council of Paris in connection with the new cemetery at Mery-sur-Oise; and the prefect of the Seine in 1874 sent to all the cremation societies in Europe a circular asking information. The municipality of Vienna has actually made cremation permissive. There is a propagandist society, called the "Urne," and the main difficulty for the poor seems to be the conveying the bodies five miles. To overcome this a pneumatic tube has been proposed. Dresden, Leipzig, and Berlin are the centers of the German movement. In Britain the subject has slumbered for two centuries, since in 1658 sir Thomas Browne published his quaint *Hydriolaphia, or Urn-burial*, which was mainly founded on the *De Funere Rerum* of the learned Kirchmannus. In 1817, Dr. J. Jamison gave a sketch of the *Origin of Cremation*, and for many years prior to 1874 Dr. Lord, medical officer of health for Hempstead, continued to urge the practical necessity for the introduction of the system. It was sir Henry Thompson, however, who of late first brought the question prominently before the public, and started in 1874 the cremation society of London. Its object is to introduce through the agency of cemetery companies, and parochial and municipal authorities, and burial boards, some rapid process of disposing of the dead, "which cannot offend the living, and shall render the remains absolutely innocuous." Thompson's problem was—"Given a dead body, to resolve it into carbonic acid, water, and ammonia, rapidly, safely, and not unpleasantly." Relying on the evidence which suggested recent burial legislation, he pointed out that in the neighborhood of cemeteries there is a constantly increasing risk of contaminated air and water. The problem he solved by the Siemens process of cremation, which, when generally employed, would effect a great saving in the cost of funerals, and would also leave a quantity of bone earth equal in value to the bones imported into this country chiefly for manure. The

British authorities in India have already had much practical experience of cremation. Poor Hindus often did not supply wood and oil enough for the total consumption of the body, and hence sir Cecil Beadon at Calcutta, and the sanitary commissioner at Madras, both found it necessary in the public interest to erect cremators on the burning-ghat or ground, which might be used on payment of a fee. So also at Poona, col. Martin, struck with the high cost (above 12 rupees) of even a poor funeral, constructed in 1864 a pentagonal cinerator for the use of Brahmans and the other Hindu castes.

Among the practical methods of cremation which have recently been attempted, we may mention, in the first place, the experiments of Dr. Polli at the Milan gas-works, and those of prof. Brunetti, who exhibited an apparatus at the Vienna exhibition of 1873, and states his results in *La Cremazione de Cadaveri*, Padua, 1873. Polli obtained complete incineration or calcination of the bodies of dogs by the use of coal-gas mixed with atmospheric air, applied to a cylindrical retort of refracting clay, so as to consume the gaseous products of combustion. The process was complete in two hours, and the ashes weighed about 5 per cent of the weight before cremation. Brunetti used an oblong furnace of refracting brick with side-doors to regulate the draught, and a cast-iron dome above with movable shutters. The body was placed on a metallic plate suspended on wire. The gas generated escapes by the shutters, and in two hours carbonization is complete. The heat is then raised and concentrated, and at the end of four hours the operation is over; 180 lbs. of wood costing 2s. 4d. sterling was burned. In the reverberating furnace used by sir Henry Thompson, a body, weighing 144 lbs. was reduced in 50 minutes to about 4 lbs. of lime-dust. The noxious gases, which were undoubtedly produced during the first five minutes of combustion, passed through a flue into a second furnace, and were entirely consumed. In the ordinary Siemens regenerative furnace (which has been adapted by Recalm in Germany for cremation, and also by sir Henry Thompson) only the hot-blast is used, the body supplying hydrogen and carbon, or a stream of heated hydrocarbon mixed with heated air is sent from a gasometer supplied with coal, charcoal, peat, or wood, the brick or iron-cased chamber being thus heated to a high degree before cremation begins. In one arrangement both gas and air are at a white heat before they meet and burst into flame in the furnace. The advantage of the Siemens furnace and gas producer (which would cost about \$4,000 in construction) are that the heat of the expended fuel is nearly all retained by the regenerators, and that the gas retort admits of the production being stopped without much loss. Some difficulty has been felt about keeping the ashes free from foreign material. The Greeks used a shroud of asbestos, the Egyptians one of amianth. Mr. Eassie suggests a zinc coffin—that metal being metal being volatile. It is also suggested that the ashes might be deposited in urns, and these placed in a columbarium, which might be in the church or at home. (The substance of the foregoing is from *Encyclopædia Britannica*, ninth edition.)

CRÉMIEUX, ISAAC ADOLPHE, 1796-1880; b. at Nîmes, France, of Jewish parents. He studied law, and was admitted to the bar in 1817. About 1830, he went to Paris, where he soon became famous as an advocate, particularly in the defense in political prosecutions. He entered political life in 1842 as a deputy from Chinon, and served till 1848. He sat on the left, and in opposition to the reigning dynasty. Under the republic of 1848, he was elected as a deputy to the constituent and legislative assembly, acting and voting always with the left.

On the night of the 2d of Dec., when Napoleon throttled the republic, Crémieux was arrested and thrown into the prison of Mazas. During nearly the whole reign of Napoleon he remained in private life, devoting himself to his profession. In Nov., 1869, he was elected a deputy to the corps législatif, where he took his seat on the extreme left, voting always with Gambetta, who was for a time a clerk in his law-office. His name is connected with many acts of legislation and many decrees. It was he who rendered the famous decree which chased from their seats the infamous magistrates composing the "mixed commissions" under the empire, whose infamous judgments drove from France into exile so many of her most distinguished and most gifted sons. Another decree justly bears his name, the "Decree Crémieux," which naturalized in mass 30,000 of his coreligionists in Algeria. The French nation will never forget his private subscription of 100,000 francs for the liberation of the French territory. He was a man of the highest sense of honor. Deutz, a Jew, who had surrendered up the duchess de Berri at Bordeaux, finding his treason overwhelmed by universal reprobation, asked from Crémieux what was called a "memoire justificatif." The advocate addressed him a letter in reply, which created much sensation at the time. He said: "I can do nothing for you. It is impossible for me to justify you in the eyes of the public. France is deaf to the justification of cowardice. It is necessary to submit to shame when one has committed a treason. I can see nothing that will excuse a crime which I detest, and which arraigns you before no other judges than public opinion. If you count me as your coreligionaire you will see your error." A member of the provisional government of 1848, he was one of the first seven named by the chamber, and proclaimed to the people from the Hotel de Ville. They were Marie, Lamartine, Ledru-Rollin, Crémieux, Dupont de l'Eure, Arago, and Garnier Pagès. With the death of Crémieux, no one of that number now survives.

Crémieux was made minister of justice of the government of 1843. Under the republic, which followed, he was elected a member of the chamber of deputies, and again in 1869. In 1875, was conferred upon him his last and greatest honor in his election as life senator under the French republic. He had an authority and influence among his people which no other man possessed. Wherever a Jew was persecuted, there appeared the old Hebrew advocate. It was in 1840 that C. went into Syria to defend the grand rabbi of Damascus, against whom had been made the accusation, as absurd as it was terrible, that he had cut the throat of a monk in order to moisten with his blood the bread that the Jews eat during Easter. The great advocate procured the acquittal of his client and those accused with him. As a recognition of that service, it is said he was escorted out of the country on his return by 12,000 Jews on horseback.

CREMONA, a province of Lombardy, Italy, between the rivers Adda and Oglio, n. of the Po, which separates it from Parma and Piacenza; about 50 m. long from n.w. to s.e., and 15 m. wide; 632 sq.m.; pop. '71, 300,595. The surface is level and the soil fertile, producing abundant crops of wheat, corn, flax, and rice. Except the spinning of silk, there are no important manufactures.

CRENSHAW, a co. in s.e. Alabama, drained by Conecuh river, recently formed from portions of several adjoining counties; about 600 sq.m.; pop. '70, 11,156—2,206 colored. The surface is level and mostly covered with pine forests, and the soil is poor. Corn, cotton, and rice are the chief productions. Co. seat, Rutledge.

CREON, a fabulous king of Thebes, succeeding on the death of Laius, the husband of his daughter Jocasta. Thebes was then trembling before the cruelty of the Sphinx, and Creon offered his crown and his daughter to whomsoever would solve the enigma proposed by the monster. Oedipus, the son of Laius and Jocasta, ignorant of his parentage, having solved the riddle, received the reward, and thus became the husband of his own mother, by whom he had two sons, Eteocles and Polynices, who, after their father's death, mutually agreed to reign in alternate years. Eteocles began, but when his year ended he refused to resign, and war followed, which was decided by the brothers in single combat, when both were killed. Creon resumed the government during the minority of Leodamus, the son of Eteocles, and commanded that the Argives, and above all Polynices, the cause of all the bloodshed, should not receive the rights of sepulture, and that any one who infringed this decree should be burned alive. Antigone, the sister of Polynices, refused to obey, and sprinkled dust upon her brother's corpse. The threatened penalty was inflicted; but Creon's crime did not escape punishment. His son, the lover of Antigone, killed himself on his grave, and Thebes was attacked by Theseus, by whose hand Creon fell.

CREOSOTE. See CREASOTE, *ante*.

CRESCENZI, PIETRO DE, 1220—1320; an Italian writer on agriculture, author of a work containing not only his personal observations and experiences, but such information as he could gain from ancient agriculturists.

CRESSON, a village in Cambria co., Penn., on the Pennsylvania railroad, 102 m. e. of Pittsburg. It is on the top of one of the Alleghany mountains, 3000 ft. above tide, and is a famous summer resort because of the purity of the air and the beauty of the scenery.

CRESSON, ELLIOTT, 1796—1854; a Quaker merchant of Philadelphia, who paid much attention to the Indian population of the country; also to the emancipation of the negroes from slavery, his method being mainly by colonization. He left over \$120,000 to various benevolent institutions, besides an estate of more than \$30,000 to found a home for aged or infirm merchants and gentlemen who had fallen into poverty.

CRETACEOUS SYSTEM (*ante*), in North America, extends along the Atlantic, s. of New York—where, though mostly hidden by the tertiary formation, it is visible in New Jersey and further s.—around the n. and w. shores of the Mexican gulf, up the Mississippi valley to the mouth of the Ohio, and, on the w., from Texas northward over the sides of the Rocky mountains. Its greatest development is in Wyoming, Utah, Colorado, and w. of the Sierra Nevada in California. In some portions of these last named regions it rises to heights of 10,000 and 12,000 feet. It is found also in Arctic America, near the mouth of the Mackenzie river. The American cretaceous beds consist of layers of greensand—called also *marl*, and extensively used in New Jersey and elsewhere for fertilizing land—sands of other kinds, clays, shells, and, on the gulf of Mexico, especially in Texas, limestone. In New Jersey the formation is 400 or 500 ft. thick, in Alabama 2000, in Texas 800, chiefly solid limestone, in the upper Missouri more than 2,000, and e. of the Wahsatch more than 9,000. In Colorado, New Mexico, and Vancouver's island the formation contains important beds of brown coal or lignite. The coal beds of Wyoming and Utah, and some southward, are regarded by some geologists as belonging to this formation; others assign them to the tertiary age. Among American cretaceous fossils are included 100 species of the earliest dicotyledonous plants yet found on this continent, half of which are allied with living American forms. Among them are species of oak, willow, poplar, beech, maple, hickory, fig, tulip, sassafras, sequoia, American palm, and cycads. Among the mollusca are species of *terebatulula*, *ostrea*, *gryphaea*, *inoceramus*, *hippurites*, *radiolites*, *ammonites*, *scaphites*, *hamites*,

baeulites, *belimnites*, *ancyloceras*, and *turritiles*. Of the fishes of the American cretaceous seas nearly 100 species are known. They include large representatives of modern predatory types like the salmon and saury, together with cestracionts and ganoids. The American reptiles of this period are especially remarkable for their number, variety, and size. Cope (who includes, however, in his statement the lignite group, which other geologists rank among the tertiary formations) enumerates 18 species of deinosaurs, 4 pterosaurs, 14 crocodinans, 13 sea saurians, 48 testudinales, and 50 sea serpents. Some of the pterosaurs from the Kansas rocks measured from 20 to 25 ft. in expanse of wing. The sea saurians were from 10 to 50 ft. long. The elasmosaurus Cope describes as a snake-like form 40 ft. long, with an arrow-shaped head on a swan-like neck that rose 20 ft. out of the water. Consequently it could swim many feet below the surface, and yet have its head extended into the air for breath. The American rocks supply 40 species of the sea serpents, some of which were 75 ft. long, with a head 4 ft. long, and a mouth of enormous size, having 4 rows of immense curved teeth with which to seize their prey and joints in the lower jaw to enable them the better to swallow it whole. In the American portion of this formation, 9 species of birds, have been found. Three belonged to the order of swimmers, which includes modern ducks, geese, and gulls; four were waders, and two, of an order long extinct, resembled fishes and reptiles as well as birds. During the cretaceous period it is supposed that the Delaware and Chesapeake bays were in the main ocean, that Florida was under water, that the valley of the Missouri was a salt water region, that the Rocky mountains were in great part submerged, and that the gulf of Mexico extended over much of Georgia, Alabama, and Mississippi, northward to the mouth of the Ohio and far on to the n.w., perhaps even to the Arctic seas.

CREUTZ, GUSTAF FILIP. Count, b. Finland, 1729; a Swedish poet. He was educated at Abo, where he made the acquaintance and friendship of Gyllenborg, and the two became the "Beaumont and Fletcher" of their country. Creutz's best work was *Alys and Camilla*, a charming idyllic poem. In 1763, Creutz was sent as ambassador to Spain, and afterwards to France.

CREVECŒUR, HECTOR SAINT JOHN DE, 1731-1813; a French traveler and agriculturist, who settled in New York as a farmer. In the American revolution he was sent to England as a prisoner, was exchanged, and went to Normandy. Afterwards he returned to the United States, and became consul-general for the states of New York, New Jersey, and Connecticut. He found that his wife was dead and his property destroyed, but his children had been protected by a gentleman of Boston. He wrote *Letters of an American Agriculturist*; *Travels in Pennsylvania and New York*; and a paper on the introduction of the potato into Normandy.

CRIMEAN WAR, begun in 1853. As the French and Russian governments had taken sides in the contention between the Latin (or Roman) and Greek (or Russian) churches for exclusive possession of the holy sepulcher and other sacred places, the czar sent prince Menschikoff to Constantinople Feb. 28, 1853, as envoy extraordinary. In addition to the claims with regard to the holy places, he made certain demands respecting the protection of the Greek Christians in Turkey. As to the holy places, the sultan recommended a mixed commission, which decided in favor of the Greek church. The demands of Menschikoff with respect to the Greek Christians in Turkey were not acceded to, and the envoy left Constantinople May 21. Two weeks later, the sultan confirmed all the rights and privileges of the Greek Christians, and appealed to his allies. In June, the French and English fleets appeared. A week later the Russians crossed the Pruth into Moldavia. Diplomacy was then renewed, and a conference at Vienna was agreed to by all except the sultan, who demanded modifications which Russia refused. About the middle of Sept., 1853, four English and French war-vessels entered the Dardanelles, and on Oct. 5, the sultan declared war against Russia. The first real act of war occurred Oct. 23, when a Turkish fortress fired on a Russian flotilla. Nov. 1, Russia declared war against Turkey. Then followed in and around the peninsula of the Crimea a series of battles through about 23 months. The chief of them in the order of time were the battles of the Alma, Sept. 20, 1854, when the English, led by lord Raglan, and the French under marshal St. Arnaud, routed the Russians, who lost 5,000 men, of whom less than 1000 were prisoners; loss of the allies, 3,400. Sept. 25, the allies took Balaklava. Oct. 17, they began an unsuccessful siege of Sebastopol. The battle of Balaklava—with the celebrated charge of the light brigade—occurred Oct. 25. On Sept. 8, 1855, the French captured the Malakoff by assault, and the Russians, sinking their fleet, retreated from Sebastopol. There was little more of important fighting; peace was concluded Mar. 30, 1856, and July 9 the allies evacuated the Crimea. The losses of the allies in the entire campaign were—English, killed or died of wounds, 5,000; died of cholera, 4,244; from other diseases, 16,000; total, nearly 24,000, besides 2,873 disabled. The British public debt was increased more than \$200,000,000. The French lost about 63,500 men; and the Russian loss has been estimated as much more than that of all the allies.

CRISPIN, KNIGHTS OF SAINT, a society of shoemakers organized in Wisconsin, in 1866, to protect the interests of workingmen against employers, regulate wages, and sus-

tain unemployed and sick members and their families. It has extended to other parts of the country and comprises a large membership.

CRITIAS, an Athenian orator and poet, one of the thirty tyrants. He was a political agitator and disturber of the peace, and became so troublesome that he was banished by the people. Returning to Athens he was made ephor by the oligarchical party, and was one of the most cruel and unscrupulous of the thirty who in 404 B.C. were appointed rulers of the Lacedaemonians.

CRITICISM, the act and art of passing judgment according to a right standard upon any literary, artistic, philosophical, or mechanical work, and pointing out its merits and defects. It is the outgrowth and aid of literature and art; valuable in proportion as it is intelligent, impartial, thorough, and free from prejudice and passion. Criticism was exercised in ancient times by men of the highest eminence, among whom were Aristotle, Horace, and Quintilian. Some of the greatest critics of modern times in England were Dryden, Pope, Johnson, Coleridge, Hazlitt, Mackintosh, Hallam, Brougham, and Macaulay. Boileau, Voltaire, Saint-Beuve, and Taine may be reckoned among the eminent critics of France; while Germany has had a host, among whom should be mentioned Lessing, Goethe, Schlegel, and Kant. There was but a narrow field for criticism in the United States during the first fifty years after the revolution, but it has widened rapidly since. The earliest workers in this field were prof. Andrews Norton and prof. Levi Frisbie, of Cambridge, Willard Phillips, Samuel Gilman, and Richard H. Dana. Among those of a later day may be mentioned William Ellery Channing, Francis Gray, Edward and Alexander Everett, John G. Palfrey, George Ripley, George Bancroft, William H. Prescott, prof. Francis Bowen, James Russell Lowell, Charles Norton, Edwin P. Whipple, and George S. Hillard. In the department of theological and biblical criticism Moses Stuart, Charles Hodge, Bela B. Edwards, and Edwards A. Park have distinguished themselves. In recent years the number of critics in various departments has greatly enlarged, and much of their work is of a high order.

CRITO, a friend of Socrates, who assisted the philosopher with material aid, arranging for his escape from prison. He was a writer on philosophy, but none of his works are extant.

CRITOLA'US, commander of the Achean army in the battle of Scarphea, 146 B.C. He was defeated by Metellus, and is supposed to have committed suicide.

CRITTENDEN, a co. in e. Arkansas on the Mississippi river, intersected by the Memphis and Little Rock railroad; about 890 sq. m.; pop. '70, 3,831—2,575 colored. The land is low and subject to inundations; corn and cotton are the chief productions. Co. seat, Marion.

CRITTENDEN, a co. in w. Kentucky on the Ohio river, bounded on the s.w. by the Cumberland; 420 sq. m.; pop. '70, 9,381—899 colored. The soil is good. Coal, iron, and lead are found. The chief productions are corn and tobacco. Co. seat, Marion.

CRITTENDEN, JOHN JORDON, 1787-1863; b. Ky., a U. S. senator from that state. He was a lawyer of great ability. In 1841, he was appointed attorney-general by president Harrison, but he resigned when Tyler became president. In 1842, he was sent to the senate. In 1848, he resigned and was chosen governor of Kentucky. When Fillmore was president, he was again attorney-general, and in 1855, he was again sent to the senate. In the war of the rebellion, he was one of the few southern statesmen who stood firmly by the union. His last public speech was in opposition to a conscription bill then before congress.

CRITTENDEN, THOMAS LEONIDAS, b. Ky., 1819; son of John J.; a lawyer. He served with distinction on gen. Taylor's staff and under gen. Scott in the Mexican war. When Taylor became president, he appointed Crittenden consul at Liverpool. He served in the union army during the war of the rebellion, rising to brevet maj. gen. of volunteers.

CRIVELLI, CARLO, Cavaliere, a Venetian painter of the 15th c., said to have studied under Jacobo del Fiore. He introduced agreeable landscape backgrounds, and was particularly fond of giving fruits and flowers as accessories. It was thought that he was of the same family as the painters Donato and Vittorio Crivelli.

CROCKER, a co. in Iowa, on the border of Minnesota, recently set off; area about 500 sq. miles. Co. seat, Greenwood Center.

CROCKETT, a co. in w. Tennessee formed since 1870. It is in a cotton-growing region. The Memphis and Ohio railroad passes through. Co. seat, Alamo.

CROCKETT, DAVID, 1786-1836, a native of Ky., famous for eccentricities. He was a good specimen of the unlearned backwoodsman, was a great hunter, and possessed a rare fund of humor, mingled with common sense. He served under Jackson in the war against the Creek Indians. In 1827, and twice afterwards, he was elected to congress, where his oddities of dress and address made much sensation. But refined civilization was irksome to him, and he was among the first of Americans to strike for the independence of Texas. He was one of the defenders of the Alamo, where, with half a dozen others, he was butchered by Santa Anna after the surrender. Crockett's well-known axiom was: "Be sure you are right, then go ahead!"

CROFT, WILLIAM, 1677-1727; an English musical composer, organist in the chapel royal. He published *Musica Sacra, or Select Anthems on score for two, three, four, five, six, seven, and eight voices; to which is added the Burial Service as it is occasionally performed in Westminster abbey.*

CRO'GHAN, GEORGE, 1791-1849; b. Ky.; graduate of William and Mary college. He served on the frontier in the war of 1812, and was distinguished as an aid to gen. Harrison. He served as a col. in the war with Mexico.

CROME, JOHN, 1769-1821; an English landscape painter, son of a weaver. He was apprenticed to a sign painter, and after long effort became a teacher of drawing. His works represent the familiar scenery of his native country.

CROMWELL, HENRY, 1628-73; second son of the great protector, and, at the age of 16, a soldier in the parliamentary army. In the Barebone parliament he sat as one of the six Irish members. In 1665, he was sent to Ireland as a maj.gen., and was subsequently made lord-deputy. His latter years were passed as a farmer. His great-grandson, the last representative of the house of Cromwell, died in 1821.

CRONOS, in Greek mythology, a son of Uranus and father of Jupiter, Neptune, Ceres, and Juno. He is usually identified with the Roman Saturn.

CROOK, GEORGE, b. Ohio, 1828; graduated at West Point in 1852. In the civil war he became maj.gen. of volunteers, and was in active service during the whole period. In 1873 he was made a brig.gen. in the regular army.

CROOKED LAKE, a handsome sheet of water in w. New York, about 18 m. long by 1 to 1½ wide, lying in a deep valley, and surrounded by vineyards.

CROOKS, GEORGE RICHARD, D.D., b. Philadelphia, 1822; graduated at Dickinson college in 1840 and joined the Methodist ministry, traveling and preaching in the western states. He subsequently occupied pulpits in Philadelphia, New York, and Brooklyn. In conjunction with Dr. McClintock and with prof. Schem he produced text books for Greek and Latin, and a Latin-English lexicon. In 1860 he was selected to be the editor of the *Methodist*, a weekly newspaper then established in New York.

CROPSEY, JASPER FRANK, b. N. Y., 1823; distinguished as a landscape painter. In 1847, he visited Italy, where he painted "The Pontine Marshes" and other pieces. Some of his works are "The Backwoods of America," "Autumn on the Hudson River," "Richmond Hill," "Niagara Falls," "Peace," "War," and "The Sibyl's Temple."

CROSBY, HOWARD, D.D., LL.D., b. New York, 1826; graduated at the university of New York, and at present its chancellor or president. From 1851 to 1859, he was professor of Greek, and subsequently held the same chair in Rutgers college. He was ordained in 1861, and became pastor of the First Presbyterian church in New Brunswick, New Jersey. Since 1863, he has been pastor of the Fourth avenue Presbyterian church, New York. He has been for several years the president and the most active member of the society for the prevention of crime, making resolute fight against illegal liquor-shops. Besides a great many sermons and addresses, he has published *Lands of the Moslem; Notes on the New Testament; Social Hints for Young Christians; Jesus, His Life and Works, as Narrated by the four Evangelists; Thoughts on the Decalogae;* and an edition of the *Œdipus Tyrannis*, of Sophocles. In 1879, he delivered the "Lyman Beecher" course of lectures in the Yale divinity school.

CROSS, a co. in e. Arkansas, on St. Francis river; 625 sq. m.; pop. '70, 3,915-1289 colored. It is level, and in some parts swampy, but fertile; producing corn, cotton, etc. Co. seat, Wittsburg.

CROSS KEYS, in Rockingham co., Va., where a battle occurred (June 8, 1862) between the union forces under Fremont and the confederates under "Stonewall" Jackson. The contest was indecisive, and the losses were about equal—over 1000 killed and wounded on each side.

CROSWELL, EDWIN, 1797-1871; b. N. Y.; for many years a leading democratic editor. He began his journalistic career on the *Catskill Recorder*, a journal established by his father. In 1823, he became sole editor of the *Albany Argus*, remaining in that position 31 years, in partisan warfare with his whig rival, Thurlow Weed. Croswell was one of the foremost of political editors and managers.

CROSWELL, HARRY, D.D., 1778-1858; b. Conn.; a journalist and clergyman. He was editor of *The Balance*, a federalist paper in Hudson N. Y., and of the *Wasp*, a less creditable publication, in which he published a libel on Jefferson. He was sued, and his defense by Alexander Hamilton was the last forensic effort of that great lawyer. In 1814, he took orders, and became rector of Trinity church, New Haven. He was the author of several devotional works.

CROTON, a small river in Dutchess, Putnam, and Westchester cos., N. Y., supplying water for the city of New York. Its length is about 60 m., and it empties into the Hudson near Peekskill.

CROTO'NA, or CROTON, a Greek colony in s. Italy, founded probably about 700 B.C., by Spartans and Achæans. It is said that in 510 B.C., the colony sent 100,000 men into

the war with Sybaris, and overcame three times that number of their enemies. The colony seems to have vanished as rapidly as it rose. Crotona was celebrated as the seat of the school of Pythagoras.

CROWN GLASS, used for windows chiefly, and composed of 100 sand, 35 potash, and 35 chalk; nearly a silicate of soda and lime.

CROWN and **HALF-CROWN**, English gold coins first issued in 1527. In 1551, they were made of silver. The crown is worth \$1.25 in United States currency.

CROWN PRINCE, the heir-apparent of the German throne. The title is used also in Sweden.

CROWS, or **ABSAROKA**, a tribe of Indians living around the Yellowstone and other Rocky mountain rivers; supposed to number something more than 3,500. They have been generally at peace with the whites; are expert hunters and warriors, and considerably advanced in civilization. They are tall, well built, and very proud of their wonderfully long hair. Catlin gives a picture of a chief whose hair swept the ground when he stood erect.

CROW WING, a co. in Minnesota, on the Mississippi river, intersected by the Northern Pacific and the St. Paul and Pacific railroads; 590 sq.m.; pop. '70, 200. Co. seat, Crow Wing.

CRUGER, the name of a prominent Dutch family of New York. **JOHN** was a slave-trader, a successful merchant, mayor of New York in 1710, and a member of the first provincial congress. **JOHN HARRIS**, nephew of John, was a British officer. After the war of independence he fled to England, and his property was confiscated. **HENRY**, brother of John Harris, was a member of the English parliament, and with Burke opposed harsh treatment of the American colonies.

CRUIKSHANK, or **CRUICKSHANKS**, **WILLIAM**, 1745-1800; a Scotch anatomist, author of a number of medical works, the most valuable of which is one on *Insensible Perspiration*.

CRUSADE, CHILDREN'S. One of the strange spasmodic fevers of the middle ages. In 1212, a peasant boy in France began to preach a crusade of boys only. Although strong measures were taken to suppress the movement, it went on; and it is stated that more than 30,000 boys embarked at Marseilles for the holy land, expecting miraculous aid in reaching Palestine and converting the Moslems. By shipwreck and capture and sale into slavery, the venture came to a disastrous end. Two similar crusades, each of 20,000 children, were undertaken in Germany; one army crossing the Alps at Mont Cenis, and the other at a more westerly point. All ended miserably.

CRUSENSTOLPE, **MAGNUS JAKOB**, 1795-1865; a Swedish historian, author of *History of the Early Years of the Life of King Gustavus IV.*, *Adolphus*; *The House of Holstein-Gottorp in Sweden*; and other works.

CRUSIUS, **CHRISTIAN AUGUST**, 1715-75; a German theologian, professor of theology at Leipsic. Two of the great objects of his life were to place philosophy on a thoroughly satisfactory basis for the future, and to bring philosophical conclusions into harmony with orthodox theology. His system was not successful, but it had a few enthusiastic supporters.

CRUEVEILLIER, **JEAN**, 1791-1874; a French anatomist educated in the university of Paris, where he became professor of anatomy, on which science he published three works. He was commander of the legion of honor.

CRUVELLI, **SOPHIE**, Baroness Vizier, b. 1824; a German singer, having a soprano voice of great strength and purity, and in her day the most popular of vocalists. On marrying baron Vizier, in 1856, she left the stage.

CRYPTO-CALVINISTS, a name given to Melancthon and those who agreed with him in wishing to unite the Lutherans and Calvinists, and especially in his supposed leaning towards the Calvinistic view of the Lord's Supper as shown in the difference between the original and the altered Augsburg confession. The former said: "The body and blood of Christ are truly present in the Lord's supper in the form of bread and wine, and are there distributed and received by the communicants: therefore the opposite doctrine is rejected." In the latter, the last clause is omitted. Luther did not approve the alteration, but tolerated Melancthon's change of doctrine. Many, however, called him a Crypto-Calvinist. The truth seems to have been that he did not consider that either opinion was a sufficient bar to communion with Christ, and therefore thought that both of them ought to be allowed. The controversy was becoming violent before his death, but afterwards it broke out with great virulence, and continued with alternate success on each side for 50 years; during which time frequent attempts were made to suppress the Calvinistic opinions by imprisoning their leading advocates, and, at last, in 1611, by the execution of chancellor Nicolas Crell.

CRYPTOGRAPHY (*ante*), secret writing, or writing to understand which the recipient must know the key. Such modes of communication have been in use from the earliest times. The Lacedæmonians, according to Plutarch, had a method which has been called the scytale, from the staff employed in constructing and deciphering the

message. When the Spartan ephors wished to forward their orders to their commander abroad, they wound slantwise a narrow slip of parchment upon the staff so that the edges met close together, and the message was then added in such a way that the center of the line of writing was on the edge of parchment. When unwound, the scroll consisted of broken letters; and in that condition it was dispatched to its destination; the general to whose hands it came deciphering it by means of a staff exactly corresponding to that used by the ephors. Polybius has enumerated other methods of cryptography. The art was in use also among the Romans. Upon the revival of letters, methods of secret correspondence were introduced into private business, diplomacy, plots, etc.; and as the study of this art has always presented attractions to the ingenious, a curious body of literature has been the result. John Trithemius, the abbot of Spanheim, was the first important writer on cryptography. His *Poligraphia*, published in 1500, has passed through many editions, and has supplied the basis upon which subsequent writers have worked. It was begun at the desire of the duke of Bavaria; but Trithemius did not at first intend to publish it, on the ground that it would be injurious to public interests. The next treatises of importance were those of John Baptist Porta, a Neapolitan mathematician, who wrote *De Furtivis Literarum Notis*, 1503; and of Blaise de Vigenere, whose *Traité des Chiffres* appeared in Paris in 1587. Lord Verulam proposed an ingenious system of cryptography on the plan of what is called the double cipher; but while thus lending to the art the influence of his great name, he gave an intimation as to the general opinion formed of it and as to the classes of men who used it; for when prosecuting the earl of Somerset in the matter of the poisoning of Overbury, he urged it as an aggravation of the crime that the earl and Overbury "had ciphers and jargons for the king and queen and all the great men—things seldom used but either by princes and their ambassadors and ministers, or by such as work or practice against or, at least, upon princes." Other eminent Englishmen were afterwards connected with the art. John Wilkins, subsequently bishop of Chester, published in 1641 an anonymous treatise entitled *Mercury, or The Secret and Swift Messenger*, a small but comprehensive work on the subject, and a timely gift to the diplomatists and leaders of the civil war. The deciphering of many of the royalist papers of that period, such as the letters that fell into the hands of the parliament at the battle of Naseby, has by Henry Stubbe been charged on the celebrated mathematician, Dr. John Wallis, whose connection with the subject of cipher-writing is referred to in the Oxford edition of his mathematical works, 1689; as also by John Davys. Dr. Wallis states that this art, formerly scarcely known to any but the secretaries of princes, etc., had grown very common and familiar during the civil commotion, "so that now there is scarcely a person of quality but is more or less acquainted with it, and doth, as there is occasion, make use of it." Subsequent writers on the subject are John Falconer, *Cryptomenys's Tactica*, 1685; John Davys, *An Essay on the Art of Deciphering in which is inserted a Discourse of Dr. Wallis*, 1737; Philip Thicknesse, *A Treatise on the Art of Deciphering and of Writing in Cipher*, 1772; William Blair (the writer of the comprehensive article "Cipher" in Rees's Cyclopædia), 1819; and C. von Marten, *Cours Diplomatique*, 1801, a fourth edition of which appeared in 1851. Perhaps the best modern work on this subject is the *Kryptographik* of J. L. Kluher, who was drawn into the investigation by inclination and official circumstances. In this work the different methods of cryptography are classified. Amongst others of less merit who have treated on this art, may be named Gustavus Selenus (i.e. Augustus, duke of Brunswick), 1624; Cospi, translated by Nicéron in 1641; the marquis of Worcester, 1659; Kircher, 1663; Schoot, 1665; Hiller, 1682; Comiers, 1690; Earing, 1737; Conrad, 1739, etc.

Schemes of cryptography are endless in their variety. Bacon lays down the following as the "virtues" to be looked for in them: "that they be not laborious to write and read; that they be impossible to decipher; and, in some cases, that they be without suspicion." The principles are more or less disregarded by all the modes that have been advanced, including that of Bacon himself, which has been unduly extolled by his admirers as "one of the most ingenious methods of writing in cipher, and the most difficult to be deciphered, of any yet contrived."

The simplest and commonest of all ciphers is that in which the writer selects in place of the proper letters certain other letters in regular advance. This method of transposition was used by Julius Cæsar. He, "per quartam elementorum literam," wrote *d* for *a*, *e* for *b*, and so on. There are instances of this arrangement in the Jewish rabbis, and even in the sacred writers. An illustration of it occurs, Jeremiah xxv. 26, where the prophet, to conceal the meaning of his prediction from all but the initiated, writes Shehach instead of Babel (Babylon), the place meant: i.e., in place of using the second and twelfth letters of the Hebrew alphabet (*B*, *b*, *l*), counting from the beginning, he wrote the second and twelfth (*sh*, *sh*, *ch*), counting from the end. To this kind of cipher-writing Buxtorf gives the name Athbash (from *a*, the first letter of the Hebrew alphabet, and *th* the last; *b*, the second from the beginning, and *h*, the second from the end). Another Jewish cabalism of like nature was called Albam; of which an example is in Isaiah vii. 6, where Tabeal is written for Remaliah. In its adaptation to English this method of transposition, of which there are many modifications, is comparatively easy to decipher. A rough key may be derived from an examination of the respective quantities of letters in a type-founder's bill, or a printer's "case." The de-

cipherer's first business is to classify the letters of the secret message in the order of their frequency. The letter that occurs oftenest is *e*; and the next in order of frequency is *t*. The following groups come after these, separated from each other by degrees of decreasing recurrence: *a, o, n, i, r, s, h; d, l; c, w, u, m; f, y, g, p, b; v, k, x, q, j, z*. All the single letters must be *a, I, or O*. Letters occurring together are *ee, oo, ff, ll, ss*, etc. The commonest words of two letters are (roughly arranged in the order of their frequency) *of, to, in, it, is, be, he, by, or, as, at, an, so*, etc. The commonest words of three letters are *the* and *and* (in great excess), *for, are, but, not*, etc.; and of four letters *that, with, from, have, this, they*, etc. Familiarity with the composition of the language will suggest numerous other points of value to the decipherer. He may obtain other hints from Poe's tale called *The Gold Bug*. As to messages in the continental languages constructed upon this system of transposition, rules for deciphering may be derived from Brethaupt's *Ars Deciffratoria*, 1737, and other treatises.

Bacon remarks that though ciphers were commonly in letters and alphabets, yet they might be in words. Upon this basis codes have been constructed, classified with words taken from dictionaries being made to represent complete ideas. In recent years such codes have been adapted by merchants and others to communications by telegraph, and have served the purpose not only of keeping business affairs private, but also of reducing the excessive cost of telegraphic messages to distant markets. Obviously this class of ciphers present greater difficulties to the skill of the decipherer. Figures and other characters have been also used as letters; and with them ranges of numerals have been combined as the representatives of syllables, parts of words, words themselves, and complete phrases. Under this head must be placed the dispatches of Giovanni Michael, the Venetian ambassador to England in the reign of queen Mary, documents which have only of late years been deciphered. Many of the private letters and papers from the pen of Charles I. and his queen, who were adepts in the use of ciphers, are of the same description. One of that monarch's letters, a document of considerable interest consisting entirely of numerals purposely complicated, was in 1858 deciphered by prof. Wheatstone, the inventor of the ingenious crypto-machine, and printed by the Philobiblon society. Other letters of like character have been published in the *First Report of the Royal Commission on Historical Manuscripts*. In the second and subsequent reports of the same commission, several keys to ciphers have been catalogued, which seem to refer themselves to the methods of cryptography under notice. In this connection also should be mentioned the "characters" which the diarist Pepys drew up when clerk to sir George Downing and secretary to the earl of Sandwich and to the admiralty, and which are frequently mentioned in his journal. Pepys described one of them as "a great large character," over which he spent much time, but which was at length finished, 25th April, 1660; "it being, says he, "very handsomely done and a very good one in itself, but that not truly alphabetical."

Shorthand marks and other arbitrary characters have also been largely imported into cryptographic systems to represent both letters and words—commonly the latter. This plan is said to have been first put into use by the old Roman poet Ennius. It forms the basis of the method of Cicero's freedman, Tiro, who seems to have systematized the labors of his predecessors. A large quantity of these characters have been engraved in Gruter's Inscriptiões. The correspondence of Charlemagne was in part made upon marks of this nature. In Rees's Cyclopædia, specimens were engraved of the cipher used by cardinal Wolsey at the court of Vienna in 1524, of that used by sir Thomas Smith at Paris in 1563, and of that of sir Edward Stafford at Madrid in 1586; in all of which arbitrary marks are introduced. The first English system of shorthand—Bright's *Characterie*, 1583—almost belongs in the same category of ciphers. A favorite system of Charles I., used by him during the year 1646, was made up of an alphabet of twenty-four letters, which were represented by four simple strokes varied in length, slope, and position. This alphabet is engraved in Clive's *Linear System of Shorthand*, 1830, having been found amongst the royal manuscripts in the British museum. An interest attached to this cipher from the fact that it was employed in the well-known letter addressed by the king to the earl of Glamorgan, in which the former made concessions to the Roman Catholics of Ireland.

Complications have been introduced into ciphers by the employment of "dummy" letters—"nulls and insignificants," as Bacon terms them. Other devices have been introduced to perplex the decipherer, such as spelling words backwards, making false divisions between words, etc. The greatest security against the decipherer has been found in the use of elaborate tables of letters arranged in the form of the multiplication-table, the message being constructed by the aid of preconcerted key-words. Details of the working of these ciphers may be found in the treatises named in this article. The deciphering of them is one of the most difficult tasks. A method of this kind is explained in the Latin and English lives of Dr. John Barwick, whose correspondence with Hyde, afterwards earl of Clarendon, was carried on in cryptography. In a letter dated 20th Feb., 1659-60, Hyde, alluding to the skill of his political opponents in deciphering, says that "nobody needs to fear them" if they write carefully in good cipher." In his next he allays his correspondent's apprehension as to the deciphering of their letter: "I confess to you, as I am sure no copy could be gotten of any of my cyphers from hence, so I did not think it probable that they

could be got on your side of the water. But I was as confident, till you tell me you believe it, that the devil himself cannot decipher a letter that is well written, or find that 100 stands for sir H. Vane. I have heard of many of the pretenders to that skill, and have spoken with some of them, but have found them all to be mountebanks; nor did I ever hear that more of the king's letters that were found at Naseby, than those which they found deciphered, or found the ciphers in which they were writ were deciphered. And I very well remember that in the volume they published there was much left in cipher which could not be understood, and which I believe they would have explained if it had been in their power."

An excellent modification of the key-word principle was constructed by the late admiral sir Francis Beaufort; it has been recently published in view of its adaptation to telegrams and post-cards. Ciphers have been constructed on the principle of altering the places of the letters without changing their powers. The message is first written Chinese-wise upward and downward, and the letters are then combined in given rows from left to right. In the celebrated cipher used by the earl of Argyle when plotting against James II., he altered the position of the words. Sentences of an indifferent nature were constructed, but the real meaning of the message was to be gathered from words placed at certain intervals. This method, which is connected with the name of Cardan, is sometimes called the trellis or card-board cipher. The wheel-cipher, which is an Italian invention, the string-cipher, the circle-cipher, and many others, are fully explained, with the necessary diagrams, in the authorities named above—more particularly by Kluber in his *Kryptographik*. [The substance of the above is from *Encyclopædia Britannica*, ninth edition.]

CRYSTALLINE LENS. See EYE, *ante*.

CRYSTAL PALACE, the edifice in London in which the world's fair was held in 1851, designed by sir Joseph Paxton, and built chiefly of glass and iron, with floors of wood. Its length was 1851 ft.; its area 21 acres. The visitors numbered more than 6,000,000. A permanent structure of this kind was built, 1854, at Sydenham, 8 m. from London. Its cost was £1,450,000; and in its vast collections all departments of art and science was represented. A crystal palace on a smaller scale, erected in New York, 1853, was used for exhibitions and great concerts; but after five years was destroyed by fire—a disaster from which it had been thought secure.

CSANÁD', a co. of Hungary; 640 sq. m.; pop. '69. 95,847. It is very level and fertile, but unhealthful. Productions, wheat, wine, tobacco, and fruit. Chief town, Mako.

CSO'KONAI, MIHALY VITEZ, 1773-1805; a Hungarian poet, educated in Debrecsin, and while very young appointed to the professorship of poetry. He was soon deprived of the place because of his immoral habits. He died after a dozen years of wretched existence. His works have been published.

CSON'GRAD, a co. in Hungary, intersected by the Theiss; 1280 sq. m.; pop. '72. 207,585. It is level, with a fertile soil, producing wheat, corn, hemp, tobacco, and fruits. Chief town, Szegedin.

CTENOPHORÆ, jelly fishes, of which about 70 species are enumerated by Agassiz. He says: "When active it hangs out a pair of most remarkable appendages, the structure and length and contractility of which are equally surprising, and exceed in wonderful adaptation all I have ever known among animal structures. Two apparently simple and irregular threads hang out from the opposite side of the sphere. Presently these appendages may elongate, and equal in length the diameter of the sphere, or surpass it, and increase to 2, 3, 4, 5, 10, and 25 times the diameter of the body, and more and more; so much so, that it would seem as if these threads had the power of endless extension and development. But as they lengthen they appear more complicated; from one of their sides, other delicate threads shoot out like fringes, forming a row of beards like that of the most elegant ostrich feather, and each one of these threads itself elongates until it equals in length the diameter of the whole body, and bends in the most graceful curves." A common species on the Atlantic coast is of a beautiful rose color, reaching a length of 3 or 4 in., and often so plentiful as to tinge large spaces in the sea with a rosy hue.

CTESIAS, a Greek physician and historian of the 5th c. B.C., author of a number of books, among which were histories of which abridgments are extant. The most important of his books was a history of Persia, but it is now generally discredited.

CTESIPHON, an Athenian orator in the 4th c. B.C. He proposed the presentation of a golden crown to Demosthenes for his sacrifices in his country's cause.

CUBA (*ante*), "the ever-faithful isle," as it has been called by the Spaniards, has a remarkable history. Discovered by Columbus on his first voyage to the new world, and regarded by him at first as a part of the western continent, it was not long before the docile harmless race of Indians who inhabited it were overrun and reduced to slavery by the Spanish adventurers, who gained great wealth by their unpaid toil. Las Casas, the Roman Catholic apostle to the Indians, seeing that they were rapidly being exterminated by cruelty, was moved by compassion to appeal to the home government for their protection. Cardinal Ximenes, the Spanish regent, sent three monks to the island

to correct the abuses complained of; but they did not accomplish much, and Las Casas procured for himself the appointment of "universal protector of the Indians." Finding it impossible, even with this additional authority, to check the cruelties which he deplored, and having observed in St. Domingo that the negroes had shown a capacity for endurance superior to that of the Indians, this humane missionary, in order to save the former from the swift extermination that threatened them, proposed that men and women of the latter race should be imported to take their places in the mines and cane-fields. The colonists were not slow to act upon this suggestion, and thus negro slavery, by sanction of religious authority, gained a foothold in the western world, which it did not lose until the slave power in the United States was overthrown in the war of 1861-65. The Indians of Cuba, however, did not escape the extermination which Las Casas was so anxious to avert, while the negroes were subjected to cruelties that checked their natural increase and made it necessary to recruit their numbers by constant importations. There was a period between the substantial extirpation of the Indians and the introduction of the negroes when the planters did not prosper, but the African slave-trade revived their drooping fortunes. Meanwhile Havana was twice destroyed by the French. In 1732, it was captured by the English, who retained possession for only one year; but prior to this date 60,000 slaves had been introduced, and they were imported at the rate of 1,000 annually for the next 25 years. The slave-trade up to this time had been a monopoly, but now, all restrictions being removed, importations rapidly increased. The whole number of slaves introduced into the island from that day to the present must be immense, for they die off with great rapidity. Even now the trade has hardly ceased. British statistical writers, making up their reports from authentic data, say the number imported between 1817-43 was 335,000; and between 1842-52, 45,000.

The government of the island has always been autocratic, being lodged in a captain-general, receiving his appointment from the home government, and therefore in no way responsible to the people over whom he rules. In the 18th c., there were two insurrections, both of which were suppressed, and twelve of the leaders in the last (1723) were hanged. Printing was introduced about 1724. From 1790, and onwards, under a captain-general named Las Casas (probably of the same family as the missionary before mentioned), the island enjoyed great prosperity. Tranquillity was preserved during the bloody revolution of St. Domingo; newspapers were established, and industry promoted. When the royal family of Spain was deposed by Bonaparte in 1808, Cuba took the side of the crown and made contributions of money and soldiers to sustain it. Since that day, the captain-generals have for the most part adopted the course which promised to advance their own particular interests, with only a subordinate regard for the powers at Madrid. By a royal order, ratified 1836, the captain-general was empowered to rule at all times as if the island were in a state of siege. At the same time a military commission was appointed, which took cognizance of offenses in general, and particularly of those involving disloyalty. The slave-trade was nearly suppressed by captain-general Valdez in 1845-47, but an increased demand for sugar soon afterwards revived it, and it was carried on more extensively than ever before.

The situation of the island is exceedingly favorable to commerce, while the extraordinary fertility of its soil and the nature of its products give it unrivaled advantages. A range of mountains extends through the island from e. to w., with streams flowing to the sea from each side. Some of the elevations reach a height of 8,000 feet. Another range skirts a part of the southern coast for about 200 miles. Between the mountains lie fertile valleys. On the s. side, from Jagua to point Sabina, the land is a continuous swamp for 160 miles. The rivers number over 250, but they are generally small, the only one that is navigable being the Cauto, which empties near Manzanillo. On this river, during the present civil war, several battles have been fought. The river Ay is broken by picturesque falls, some of them nearly 200 ft. high. Mineral springs, mostly of a sulphurous character, abound. Gold, silver, iron, copper, quicksilver, lead, antimony, arsenic, magnesia, copperas, and other metals exist, but not under conditions which render mining profitable. Rock salt abounds on both the n. and s. coasts. Marble and jasper of fine quality are found in some places. The average temperature of the island is about 77°. The mercury rarely rises higher than 100° or falls below 50°. The average in the hottest month is 82°, in the coldest 72°. The seasons are but two, the rainy and the dry; the former being in May or June and ending in Nov. In the dry season, dews are abundant. Thunder storms are violent from June to Sept. Earthquakes are frequent on the eastern side. The healthfulness of the climate is affirmed by some and denied by others. Yellow fever often prevails in the towns on the coast, but is unknown in the interior. The forests abound in woods of the hardest kind, among which may be mentioned lignum-vitæ, ebony, rosewood, and mahogany. The fruits are those generally found in the tropics, the pine-apple and the banana being prominent. Of the sweet potato there are several varieties, while cassava and Indian corn are raised for home consumption. Wild beasts are few and small, the wild dog being the most prominent. The indigenous birds number 200 species, some of which display a beautiful plumage. Birds of prey are hardly known. Of fishes there are more than 600 species. Turtles abound, oysters are small and poor, alligators are common, and snakes are few and mostly harmless. Among the insects are the tarantula, the scor-

pion, the sand-fly, a dozen varieties of mosquito, an ant which destroys all living vegetable matter, 300 varieties of the butterfly, and as many more of flies. The inhabitants of Cuba are mostly of Spanish or African descent. At first none but Castilians were allowed to settle, but now all classes of Spaniards are found upon the island. They are, however, separated from each other in the social scale, the pure Castilian blood asserting its superiority. The offspring of foreigners, of whatever color, are called creoles, between whom and the Spaniards there is a feeling of caste that is almost insurmountable. The Spaniards hold all the offices and regard themselves as a privileged race. The trade of the island is mainly in their hands, while the creoles are generally planters or land-owners. The island embraces three military departments—the western, the central, and the eastern. Owing to the disturbed state of affairs, no reliable census of the inhabitants has been taken since 1862, when (including 34,000 Chinese) they numbered 1,359,433; of whom nearly 765,000 were whites, over 222,000 free colored, and more than 368,000 slaves. It is believed that the population has rather fallen off than increased since this enumeration was made. On June 23, 1870, Spain enacted a law emancipating all slaves who should be born after that date, and also all those who had attained the age of 60 years; but the slaveholders have been powerful enough to prevent the enforcement of the act. The Chinese imported from 1847 to 1873, numbering over 50,000, have also been virtually reduced to slavery and treated with great cruelty. The chief industry of Cuba is the raising of sugar and tobacco. Coffee, formerly raised for exportation, is now produced for home consumption. Cotton is cultivated to a small extent. Oranges and pine-apples are the only fruit for exportation. The mulberry is raised for silkworms with success. Cattle-raising is carried on to a large extent. In the 18th c., the business of ship-building was carried on extensively, the forests furnishing an abundance of the best timber; but the mother country, desiring a monopoly of the business for herself, imposed restrictions which led to its discontinuance. Havana, the capital, is a city of over 200,000 inhabitants. There are a dozen smaller cities, as many towns, and over 300 villages and hamlets. The disturbed condition of the island during the last 12 years has had a most unfavorable effect upon business, diminishing the production of the great staples and reducing trade in the same degree. During the first four years of the civil war, from 1868 to 1871, the average annual production of sugar and molasses was over 7,122,000 tons. The total exports of the island in 1870 were valued at \$82,600,666; those of 1871, at \$71,251,440. The exports are generally undervalued, but it is officially known that those received in the United States in 1872 amounted to \$14,751,956.

The educational system of Cuba was at first conformed to that of Spain, but it has been changed for local reasons. Innocent XIII., with the approbation of Spain, established the royal and pontifical university of Havana in 1772. The Franciscans had previously instructed classes in philosophy and theology in their convent. In 1842, the university, which had been administered by the Dominican friars, became a national establishment, and the study of the natural sciences was introduced, but in 1863, under the ministry of gen. Concha, the system of instruction was assimilated to that of Spain, and philosophical studies reduced to very narrow limits. There are two colleges for the clergy—one at Havana, the other at Santiago de Cuba. The expenses of education in the higher branches are defrayed from the general revenue; those of primary education by the town councils. The statistics are not recent, but, according to the latest reports, there were over 200 public schools, of which less than 100 were for girls. The number of private schools was 245. The pupils numbered 22,200 of both sexes, of whom 21,000 were white, and 1200 were colored. Less than one half of the white population (excluding the Chinese) can read and write. In 1868, there were 39 newspapers published on the island, 21 of them in Havana, 5 in Santiago de Cuba, 3 in Matanzas, and the others in places of less importance.

Until within a comparatively recent period, land communication between the different parts of the island was difficult; but railroads have been built between the capital and several of the most important towns, with an aggregate length of about 400 miles. The whole population, with the exception of a portion of the foreign residents, is Roman Catholic. An archbishop, residing at Santiago de Cuba, rules the eastern, and a bishop at Havana, the western diocese. The revenues of the island are derived in part from duties on importations, and in part from taxation: formerly they exceeded expenditures by a considerable sum annually; but the civil war has put the balance on the other side of the ledger. While slavery existed in the United States, there was a strong desire among a large portion of the people of this country for the annexation of Cuba. To accomplish this end, the supporters of slavery plotted from time to time, proposing now to wrest the island from Spain by filibustering operations, and now to purchase it. But Spain would not sell, and filibustering did not prosper. In 1848, president Polk, through the American minister at Madrid, without any constitutional authority whatever, offered \$100,000,000 for it: but the offer was promptly rejected by Spain. Indeed, Spain was always as determined not to sell as American politicians were anxious to buy. The United States more than once gave Spain to understand that she would not permit the island to be transferred to any nation but herself, one reason for this being that if it should fall into the hands of England or France, the slaves might be emancipated, and so the island become a center of anti-

slavery influences inimical to the existence of slavery in the southern states. In 1849, after the failure of the Lopez expedition, which had been mainly if not wholly organized on American soil, president Fillmore refused to unite with England and France in guaranteeing the possession of the island to Spain. In 1854, during the presidency of Franklin Pierce, when the government was almost wholly under slaveholding influences, three American ambassadors at European courts, Buchanan, Soule, and Mason, met in conference at Ostend, and joined in a manifesto, in which it was claimed that if Spain should refuse to sell the island to the United States, and the slaves there should be set free, the latter power would have a right to seize and annex it. Fortunately the slavery question, as connected with the national government, assumed from this time forward an aspect which made the execution of this semi-official threat an impossibility. The Spanish revolution of 1868 led to a revolt in Cuba, which had in view the independence of the island and the abolition of slavery. The republican home government gave no countenance to this movement, but sent money and troops to resist it. The war has been bloody and cruel. In 1870, the United States, having no longer any desire to conserve the interests of slavery, tendered its good offices in behalf of peace, proposing the sale of the island to the Cubans; but Spain declined the offer. It is believed that Spain has sent no less than 100,000 soldiers to Cuba to aid in suppressing the insurrection. Up to Aug., 1872, 13,600 Cubans had been killed in battle, while 43,500 prisoners had been put to death. In the first three years of the war, Spain expended therein over \$73,000,000. The expenditures, both in men and money, since that time, have not been very large, and there has been official proclamation of the end of the rebellion, yet the war continues, with no definite prospect of termination.

CUCA. See COCA, *ante*.

CUCUMBER TREE, an American forest tree of the magnolia species, growing in nearly all the states. The fruit, which looks like a cucumber, when macerated in spirits makes a bitter tonic drink. The timber is light and useful for boat-building.

CUFFEE, PAUL, 1759-1818; a negro sea-captain, b. of an Indian mother, who accumulated a fortune in seafaring life. He was a member of the society of Friends. He was among the first to encourage the colonization of his people in Sierra Leone.

CUFFEE, PAUL, 1775-1812; an Indian of the Shinnecock tribe, on Long island, N. Y.; long employed as a preacher by the New York missionary society.

CUFIC WRITING. See KUFIC WRITING, *ante*.

CUL-DE-SAC, a street or alley with an opening at only one end, easy therefore of entrance, but not for exit; thence any close, confined, uncomfortable place.

CULLEN, PAUL, D.D., Cardinal, b. in Ireland, 1803; educated in Rome; made cardinal, 1866. He is the first man of Irish birth who has been made a cardinal since the reformation.

CULLUM, GEORGE W.; b. N. Y., 1809; graduate of West Point, 1833. He retired from active service in 1874, holding the rank of maj.gen.

CULPEPER, a co. in n. Virginia, between the Rapidan and Rappahannock rivers, intersected by the Orange, Alexandria, and Manassas railroad; 673 sq.m.; pop. '70, 12,227—6,169 colored. Agriculture is the main business. Co. seat, Fairfax.

CULPEPER, JOHN, an early English emigrant to the Carolinas who led an incipient rebellion, was tried for treason, but was acquitted because there had been really no government to rebel against. In 1680, he laid out on paper the plan of the city of Charleston.

CULPEPER, or COLEPEPER, THOMAS, Lord, d. 1688; one of the grantees and a governor of the colony of Virginia. He administered the office chiefly for his own gain, being shrewd and unscrupulous to the last degree.

CUMANIA, GREAT and LITTLE, districts in Hungary. Great C. is a low plain subject to inundation, with a pop. of about 70,000. Little C. has an area of 1000 sq.m. and a pop. of about 85,000.

CUMBERLAND, a co. in s. Illinois, intersected by the Embarras river and three or four railroads; 310 sq.m.; pop. '70, 12,223. Agriculture is the main business. Co. seat, Prairie City.

CUMBERLAND, a co. in s. Kentucky, on the Tennessee border; 375 sq.m.; pop. '70, 7,690—1509 colored. Productions agricultural. Co. seat, Burksville.

CUMBERLAND, a co. in s.w. Maine, on the ocean; traversed by several railroads, and bounded on the n.e. by the Androscoggin river; 990 sq.m.; pop. '70, 82,021. The soil is fertile and well cultivated. Co. seat, Portland.

CUMBERLAND, a co. in s.w. New Jersey, on Delaware bay; intersected by the West Jersey and Vineland railroads; 480 sq.m.; pop. '70, 32,898. Productions chiefly agricultural. Co. seat, Bridgeton.

CUMBERLAND, a co. in North Carolina, intersected by Cape Fear river; 1680 sq.m.; pop. '70, 17,035—7,518 colored. Lumber and turpentine are the staples. Co. seat, Fayetteville.

CUMBERLAND, a co. in s. Pennsylvania, in the Cumberland valley; traversed by three or four railroads; 545 sq.m.; pop. '70, 43,912. Productions agricultural. Co. seat, Carlisle.

CUMBERLAND, a co. in Tennessee; 700 sq.m.; pop. '70, 3,461—98 colored. It is hilly and mountainous. Co. seat, Crossville.

CUMBERLAND, a co. in central Virginia on the Appomattox and James rivers; 310 sq.m.; pop. '70, 8,142—5,433 colored. Productions mainly agricultural. Co. seat, Cumberland Court-house.

CUMBERLAND, a co. in Nova Scotia; 1600 sq.m.; pop. '71, 23,518. Agriculture, lumbering, and ship-building constitute the chief branches of industry. Chief town, Amherst.

CUMBERLAND (*ante*), a city and seat of justice of Alleghany co., Md., on the n. branch of the Potomac, at the w. terminus of the Chesapeake and Ohio canal; pop. estimated at 13,000. The city is on the outer edge of the great coal basin of the same name, with which it is connected by the Cumberland and Pennsylvania railroad, and the Cumberland coal and iron company's road. The city has gas and water, and being 600 to 700 ft. above the river, is free from miasma. There are 16 churches, a Carmelite college, two academies, and many public and private schools. Among the manufactories are steel-rail mills, other railroad-bar mills, a blast-furnace, two iron foundries, steel works, cement mills, steam tanneries, locomotive works, railroad car and machine shops, flour mills, furniture works, etc.

CUMBERLAND GAP, a pass through the mountains between Kentucky and Tennessee, an important strategic position in the war of the rebellion.

CUMBERLAND MOUNTAINS, a spur of the Appalachian chain, partly in s.e. Kentucky, though the main portion is in Tennessee. Its formation is coal, slate, and carboniferous limestone. It is a plateau in places nearly 2,000 ft. above tide, and nearly 50 m. in width, with steep descent on both sides. A few hills in the plateau rise 700 or 800 ft. higher. There are some valuable coal mines, and the main portion is well timbered with white ash, hickory, chestnut, etc.

CUMBERLAND PRESBYTERIANS had their origin in a revival of religion which commenced about the opening of the present century in the south-western part of Kentucky, under the preaching of Rev. James McGready, a Presbyterian of Scotch-Irish descent, who had been educated at Jefferson college in western Pennsylvania. The revival, at first, was of slow progress, but soon received a great impulse and became one of the most important religious movements in the United States, as it did much to establish faith in Christianity among the people of the Mississippi valley. The number of congregations into which the converts were organized was so large that it was impossible to supply them with ministers educated in the thorough manner usually required by the Presbyterian church. Young men of good abilities and earnest piety were, therefore, selected and advised to prepare themselves by a shorter course. When they applied for licensure to the presbytery of Transylvania, exception was taken both to their limited education and their opinions concerning the doctrines of the atonement and the divine decrees. They were, however, licensed, and, soon after, were set off to the presbytery of Cumberland (formed by a division of the presbytery of Transylvania), and two of them were ordained by it. A commission was appointed by the synod to inquire into the action of the presbytery. Its first demand was that those who had been licensed or ordained should submit to a re-examination. This they refused to do, and were, therefore, prohibited from exercising their ministry until they complied with the demand. They who had been thus proscribed, and the members of presbytery who supported them, organized themselves into a council for the management of their own church and revival work. They sent a memorial to the general assembly, but that body sustained the synod, yet directed it to review its proceedings. On complying with the direction, the synod confirmed what had been done, and also dissolved the Cumberland presbytery, and reannexed its members to the presbytery of Transylvania. After a fruitless attempt at reconciliation, the two ministers who had been silenced, with one member of the last-named presbytery, formed themselves into an independent body, which they called the Cumberland presbytery, after the presbytery that had been dissolved. From that time the progress of the movement was much more rapid than its originators looked for; and though the churches starting from it spread both east and west, the local name, Cumberland Presbyterians, continued to be applied to them. In 1814, an edition of the Westminster confession and catechisms was published, altered to suit their system, which tries, it is said, to steer between Calvinism and Arminianism. It rejects the doctrines of eternal reprobation, limited atonement, and special grace, teaching that the operation of the Holy Spirit is co-extensive with the atonement. Other points of Calvinism, as the necessity of the Holy Spirit's work in regeneration, and the perseverance of the saints, are retained. Revivals and camp-meetings are earnestly advocated. In May, 1878, 26 synods were reported to the general assembly, extending from the lakes to the gulf, and from the Appalachian mountains to the Pacific, and comprising 112 presbyteries, 1315 ministers, 256 licentiates, 187 candidates, 2,347 congregations, 8,217 elders, 2,324 deacons, 106,250 communicants, 57,200 persons in Sunday-schools; the value

of church property reported was \$1,750,000, and the amount of contributions for the year, \$280,000. The chief institutions of learning are the Cumberland university, Lebanon, Tenn. (founded in 1842, and having the leading law school of the south); college of West Tennessee; Waynesburg college, Pa.; Lincoln university, Ill.; Trinity university, Texas; and Cane Hill college, Arkansas. A separate organization of colored members of the denomination has been formed.

CUMBERLAND and TEVIOTDALE, Duke of, titles borne by the king of Hanover, a prince of the blood-royal of Great Britain, and first cousin of queen Victoria. He was born in 1819, and is now blind.

CUMING, a co. in n.e. Nebraska, crossed by the Omaha and Northwestern railroad; 400 sq.m.; pop. '70, 2,934. Agriculture is the chief business. Co. seat, West Point.

CUMMING, ROUALEYN GORDON, 1820-66; the "lion hunter;" a Scotchman educated at Eton, who served in the English army in India. In 1843, he began his five years of a hunter's life in South Africa, where he had many remarkable experiences.

CUMMINGS, JOSEPH, D.D., LL.D.; b. Me., 1817; a Methodist preacher; in 1857, chosen president of the Wesleyan university at Middletown, Conn., from which position he retired a few years since.

CUMMINGTON, a t. in Hampshire co., Mass, on the Westfield river; pop. 1037. The poet William Cullen Bryant was born here.

CUMMINS, GEORGE DAVID, D.D., b. Del., 1822; graduated at Dickinson college; entered the Methodist ministry; took orders in the Episcopal church, 1845; rector of several Episcopal churches in Virginia, Washington, and Chicago. He was chosen assistant bishop of Kentucky, 1866. In 1873, he resigned this position; and, withdrawing from the denomination, founded the reformed Episcopal church, of which he was made bishop, 1873. He was an earnest and eloquent preacher.

CUMMINS, MARIA S., 1827-66; b. Mass., known as a writer of works of fiction, among them, *The Lamplighter*, and *Mabel Vaughan*.

CUNARD, Sir SAMUEL, 1787-1865; an English engineer, the founder of the Cunard line of ocean steamers plying between England and America. He was made a baronet in 1859.

CUNDURANGO, a vine growing in n. South America, containing a strong bitter principle. It was at one time supposed to be valuable in the cure of cancer, and was sold in the United States at enormous prices. But it was worthless, and cargoes of it were used for fuel.

CUNEO. See CONI, *ante*.

CURES, a t. of the Sabines, about 25 m. from Rome, on the Tiber, the birthplace of Tatus. The term *Quirites*, as applied to the Roman people, is supposed to have come from Cures. The town was destroyed by the Lombards near the close of the 6th century.

CURIA, in Roman history, the name of a division of a tribe in the constitution of Romulus. The tribes being 3 and the divisions 10, there were 30 curiae. This division was a division of the populus to the exclusion of the plebs; and the assembly of the populus was called the *comitia curiata*. See COMITIA.

CURRAGH, in Kildare co., Ireland, an open country long favored as a race-course, and place of meeting for the people. A camp was established there during the Crimean war capable of accommodating 10,000 men.

CURRENCY (*ante*), that which is in circulation among a people, being given and taken as having value or as representing property. Any nation may create a currency at will, decree its nominal value, and enforce its acceptance among their subjects; though its real value will be subject to laws deeper and stronger than any statute. By common consent gold (and silver to some extent) is currency among nations. On extraordinary occasions currency has been issued in notes under the form of a loan to the government, to an enormous extent, as during the civil war in America, when the obligations of the United States sold for only about 32 cents on the dollar. But all these notes, though so distrusted at the time, were really good for all that they promised, and are now recognized as such. See MONEY, *ante*.

CURRENT RIVER, a stream in Arkansas, length about 250 miles. It runs through a hilly region rich in minerals, though not much developed. It abounds in fish, and in some portions is navigable.

CURRITUCK, a co. in n.e. North Carolina, facing the Atlantic ocean; 200 sq.m.; pop. '70, 5,131. The soil is sandy and poor. Co. seat, Currituck Court-house.

CURRY, a co. in s.w. Oregon, on the Pacific ocean; intersected by Rogue river; 1500 sq.m.; pop. '75, 688. Has a rough surface, but fertile soil. Co. seat, Ellensburg.

CURRY, DANIEL, D.D., b. N. Y., 1809; a graduate of Wesleyan university in 1827. In 1864, he was appointed editor in chief of the *Christian Advocate*, the recognized organ of the Methodist Episcopal church.

CURSO'RES, an order of swift-footed, large, and strong birds, of which the ostrich, the emu, and the cassowary are examples. The wings, in most species, are not developed sufficiently for flight, though they add speed in running. Among the fossil C. were the *apyornis*, the *dinornis*, etc., larger than any birds now living.

CURTIN, ANDREW GREGG, b. Penn., 1817; governor of Pennsylvania in 1860, when he displayed great energy and ability in raising troops for the union in the war of the rebellion, which began in that year.

CURTIS, BENJAMIN ROBBINS, LL.D., b. Mass., 1809-74; graduated at Harvard. He was a member of the bar in Boston, and in 1851 was appointed one of the justices of the U. S. supreme court, resigning this office in 1857. On the impeachment of Andrew Johnson, he appeared as one of the counsel for the defendant. His reports of law cases are well known.

CURTIS, GEORGE TICKNOR, b. Mass., 1812; graduated at Harvard, and began law practice in Boston, afterwards removing to New York. He has been several times in the Massachusetts legislature, and was for a time U. S. commissioner. While acting as such he returned to his master the fugitive slave Thomas Sims, an act which brought upon him severe censure. Among many books issued by him are *Rights and Duties of Merchant Seamen*; *Treatise on the Law of Copyright*; *History of the Origin, Formation, and Adoption of the Constitution of the United States*; and various works on legal subjects.

CURTIS, GEORGE WILLIAM, LL.D., b. Rhode Island, 1824. In early life he was clerk with a merchant of New York. In 1842, he and a brother joined the Brook Farm association, near Roxbury, Mass., and from there both went out as farmers. In 1846, he visited the old world, and on returning published *Nile Notes of a Howadji*, comprising his observations in Egypt. Two years later came *The Howadji in Syria*. About this period he undertook the editorship of a new monthly magazine (Putnam's), and was a frequent contributor to the *New York Tribune*. After the suspension of the magazine (in which Curtis was a heavy loser), he lectured and wrote for the Harpers, particularly "The Editor's Easy Chair" in the *New Monthly Magazine*, a series of papers regularly continued to the present date (1880). He has for a long period been the chief editor of *Harpers Weekly*, a very widely circulated illustrated journal. Among his separate works not already mentioned are *Lotus Eating*; *Prue and I*; *Trumps*; and the *Potiphar Papers*. He is one of the regents of the university of New York. He is popular as a lecturer and eminent as a political orator, and is master of a clear and finished literary style.

CURTIS, SAMUEL RYAN, b. N. Y., 1805-66; a graduate of West Point; served in the Mexican war as col. of volunteers; was a member of congress from 1855 to 1861. In the war of the rebellion, he served in various grades, reaching maj. gen. of volunteers. In 1865, he was commissioner to arrange treaties with certain Indian tribes. He was greatly interested in the construction of the Union Pacific railroad.

CURULE CHAIR, the chair of state, equivalent to a throne, among the early Romans. None except consuls, prætors, and a few others high in authority were permitted to occupy it. The chair was usually ornamented with gold and other precious work.

CURZON, PAUL ALFRED DE, b. 1820; a French painter especially devoted to landscape works. Among his best works are the "Acropolis of Athens" and the "Shores of the Cephissus."

CUSA, NICOLAS DE, 1401-64; cardinal of the Roman Catholic church, the son of a poor fisherman. The interest of this man for our times lies in his philosophical much more than his political or ecclesiastical activity. He prophesied the end of the world in 1734.

CUSH, a cognomen, to theorize on which would be a waste of time. In Scripture, it seems to mean sometimes a man, sometimes a country. It is undoubtedly applied in general to the region s. of the Israelites; including portions of Africa s. of Egypt (Ethiopia, etc.), and probably also portions of Arabia. Other applications of it have been advocated, but remain unproved.

CUSHING, CALEB, LL.D., 1800-79; b. Mass.; a lawyer of eminence. Politically, he began life as a whig, but, with president Tyler, he drifted over to the other side. He was often chosen a member of the Massachusetts legislature, and in 1835 was sent to congress. As commissioner to China, he negotiated our first treaty with that empire. He served as col. in the Mexican war; was made justice of the supreme court of Massachusetts, 1852; and was attorney-general of the United States, 1853-57. He was one of the counsel for the United States in the Geneva conference. He was a man of remarkable erudition, and great logical faculty; but his extraordinary abilities, though they did not fail of public recognition, seem to have failed of their due permanence of application.

CUSHING, LUTHER STEARNS, 1833-56; b. Mass.; an American lawyer, well known as a reporter of judicial decisions, and as the author of a *Manual of Parliamentary Practice*, 1845.

CUSHING, THOMAS, LL.D., 1725-88; b. Boston; a graduate of Harvard, and president of the general court, or legislative body of Massachusetts. He was a member of

the provincial and Philadelphia congresses. In England, he had the repute of being the great leader of American rebellion.

CUSHING, WILLIAM, LL.D., 1732-1810; b. Mass.; a graduate of Harvard, lawyer, and attorney-general of Massachusetts. He succeeded his father as chief-justice of the supreme court.

CUSHING, WILLIAM B., 1843-74; b. Wis.; for a time a member of the naval academy, who showed conspicuous bravery in the naval service of the union during the war of the rebellion.

CUSHMAN, CHARLOTTE SAUNDERS, b. Boston, 1816; d. there 1876. She was of Puritan descent, from Robert, one of the organizers of the pilgrim emigration, himself arriving but a few weeks after the landing of the *Mayflower*. Charlotte was the eldest of five children, left poor with the mother by the early death of her father. She had a good voice, and took lessons in singing in hope of being able to assist in the support of the family. In the spring of 1830, she first sang at a public concert, and her fine contralto voice and good manner were at once approved. It was her intention to follow the lyric profession, and she appeared with success in *Marriage of Figaro* and other operas. In 1835, she went to New Orleans, where she suddenly lost the control of her voice, so far as singing was concerned. She was greatly disheartened, but at the request of a tragedian (Mr. Barton) she undertook her first dramatic part, and that was no less than "Lady Macbeth." She made a grand success, and the promising *prima donna* became on the instant the favorite *tragedienne*. Every manager wanted her, and she rapidly added such characters as "Romeo" (to bring forward her sister Susan as "Juliet"), "Elvira," "Bianca," "Helen McGregor," "Queen Gertrude," "Goneril," "Emilia," "Tullia," "Nancy Sykes," and the wonderful "Meg Merrilies." Later on she played both "Queen Catherine" and "Cardinal Wolsey" in *Henry VIII.*; also "Ophelia," "Pauline," "Viola," "Katherine" (in *The Shrew*), "Lady Teazle," and many other parts. While great in Shakespeare, she will be longest remembered as "Meg Merrilies." She visited England and the continent twice or thrice, and had exceptional triumphs in London and the principal cities of England and Ireland. She resided several years in Rome, where she was the intimate friend of Miss Emma Stebbins, the American sculptor. It was not alone success in her art that made Charlotte Cushman celebrated. She was not only a great and good artist, but a good woman, honored in the most cultivated society in America and Europe. Her final appearance in New York, when she took leave of the stage of that city, was memorable. On the last night she played "Lady Macbeth." When the curtain fell, a body of the most eminent citizens, with William Cullen Bryant at their head, came upon the stage and presented the actress with a laurel crown, inscribed "C. C.: Palmam qui meruit ferat." Miss Cushman never married. In 1880, her tomb in Mt. Auburn (near Boston) was marked by an obelisk, which is in form an exact copy of Cleopatra's needle as it stood at Heliopolis.

CUSHMAN, ROBERT, abt. 1580-1625, one of the early New England pilgrims. He chartered the *Mayflower* and sailed in her from Southampton, in company with the *Speedwell*. When that vessel was found unseaworthy, and left at Plymouth, England, he remained as leader of the delayed pilgrims, and followed with them in the next vessel. On the 12th of Dec. (old style), 1621, he preached the first sermon that was printed in America, the subject being, "The Sin and Danger of Self-love." The next day he sailed for England on business for the infant colony. C. was a man of ardor and fidelity, eloquent in speech, and with great capacity in affairs.

CUSK. See TORSK, *ante*.

CUSTER, GEORGE A., 1840-77; b. Ohio; graduate of West Point, and a most gallant officer in the U. S. army. He served with honor and distinction during the war of the rebellion. He was killed in a contest with the Indians in Montana in 1877.

CUSTINE, ADAM PHILLIPE, Count de, 1740-93; a French statesman during the revolution of 1789. He was suspected of disloyalty to the revolutionists because of his aristocratic birth, and was duly guillotined. His son met the same fate.

CUSTINE, ASTOLPHE, Marquis de, grandson of count Adam; 1793-1857; b. France; author of several novels and an unsuccessful tragedy. He also published some books of travels.

CUSTIS, GEORGE WASHINGTON PARKE, an adopted son of George Washington, 1781-1857; b. Md. He was a grandson of Mrs. Washington—his father being her son by her first husband. Just after the surrender of Cornwallis, this son, John Parke Custis, died; and of his four children, two were adopted by Washington. C. was the only member of Washington's family who survived after 1852. C. studied at Princeton; and in 1802, went to reside on an estate of 1000 acres at Arlington, near Washington. His daughter married Robert E. Lee, afterwards general in the confederate army, and the grand estate was confiscated by the government, and is now the site of a union soldiers' cemetery.

CUTCH GUNDA'VA, a district in Beloochistan. The Hala range of mountains extends along the western frontier. The soil is rich, producing grain and cotton. The climate is damp and unhealthy.

CUTCH, or KACHH, GULF OF, a portion of the Arabian sea, 110 m. long, running between Cutch and Guzerat.

CUTLER, LYSANDER, b. Me., d. 1866; a maj.gen. in the union army during the rebellion.

CUTLER, MANASSEH, LL.D., 1742-1823; b. Conn.; graduate of Yale; a Congregational minister. He was interested in botanical studies. C. was the leader of the pioneers who settled northern Ohio, and was elected to congress in 1800.

CUTLER, TIMOTHY, D.D., 1685-1765; b. Mass.; an American clergyman, graduate of Oxford, who became president of Yale college, 1719, and rector of an Episcopal church in Boston, 1723.

CUTTY STOOL, a seat once used in the Scottish church for the exposure of offenders against chastity. The sinner was required to sit on the stool before the whole congregation and endure a lecture from the minister.

CUT-WORM, a somewhat indefinite name for destructive grub worms of various species, many of which belong to the genus *agrotis*. The most destructive are the winter dart-moth and the wheat dart-moth, destroying the germs of wheat and buck-wheat. Sometimes they devastate whole fields of corn, cabbage, and other vegetables. One species ravage the young buds of apple and pear trees. No prevention has yet been found effective.

CUYAHOGA, a co. in Ohio, bordering on lake Erie, traversed by several railroads; 426 sq.m.; pop. '70, 132,110. Productions, grain, wine, butter, and wool. Co. seat, Cleveland.

CUYLER, THEODORE LEDYARD, D.D., b. N. Y., 1822; graduated at Princeton; first a Presbyterian minister in New Jersey; then pastor of Market street Reformed church, New York; and now pastor of Lafayette avenue Presbyterian church, Brooklyn, which has the largest membership of that denomination in the United States. He has written several religious works, and a prodigious number of letters and articles in religious newspapers.

CYANÆA, jelly fishes known as sea-nettles from a peculiarly poignant sting, which makes them the annoyance of sea-bathers.

CYANE, a nymph, wife of Eolus, the god of the winds. The legend was that Pluto changed her into a fountain.

CYANOMETER, an instrument for determining the color of the sky; a disk divided into sections, the several sections being tinted with blue, gradually increasing in intensity. If the sky be viewed through it, some of its sections will appear deeper and some lighter in tint than the sky. The section where there is no perceptible difference gives the measure or degree of the blueness of the sky.

CYAXARES I., King of the Medes, who began to reign about 663 B.C. In 610, he was at war with the king of Lydia, when there occurred an eclipse of the sun, whereupon the kings made a treaty of peace.

CYAXARES II., grandson of Cyaxares I., and uncle of Cyrus the great, supposed to be the "Darius the Mede" spoken of by the prophet Daniel. He reigned in Babylon two years after its conquest by Cyrus.

CYC'LIC POETS, the "routine" writers of Greek mythological stories. The name was used in a derogatory sense, implying that the writers were mere followers of greater men. Their names are now scarcely known.

CYD'NUS, a river of Cilicia, passing the city of Tarsus and emptying into the Mediterranean. It was on this river that Cleopatra made her voyage to meet Antony.

CYLLE'NE, a mountain in n.w. Arcadia, the fabled birthplace of Mercury. Its modern name is Zyria.

CYNOCEPH'ALUS. See BABOON, *ante*.

CYNOSCEPH'ALÆ, a mountain range in Thessaly, ancient Greece, noted for two important conflicts. In the first the Thebans defeated the tyrant of Pheræ, 364 B.C.; in the second the Romans defeated and captured Philip of Macedon, 196 B.C.

CYNTHIAN'A, a city, capital of Harrison co., Ky., on the Licking river and the Kentucky Central railroad, 66 m. s. of Cincinnati; the scene of some fighting during the rebellion; pop. '70, 1771. It is in a fertile agricultural district, and is widely known for its famous race course.

CYNURIA, a district in the Peloponnesus, inhabited by a rude class of Ionians. The city of Thyrea (now called Astros) was one of their strongholds.

CYPRIPED'IDIUM, the plant known as lady's slipper and moccasin flower. It is used to some extent as a sedative in nervous diseases.

CYPRUS (*ante*). one of the largest islands in the Mediterranean, in the extreme n.e. of that sea, nearly equidistant from Asia Minor on the n. and Syria on the e.; 46 m. from the former, and 60 m. from the latter; 145 m. long and 60 wide at the extreme points; 3,678 sq.m.; pop. 135,000—said to have been 1,000,000 when under the rule of

Venice. By treaty between the British government and the Ottoman empire, June 4, 1878, Asiatic Turkey was placed under British protection, with the stipulation that if Russia shall restore to Turkey the conquests made in Armenia during the late war, Cyprus shall be evacuated by England and the convention be at an end. Sir Garnet Wolseley was appointed governor, and was installed as administrator, July 23. The island was formally taken possession of in the name of the queen by vice-admiral lord John Hay, July 12, 1878. The present high commissioner and commander-in-chief is maj. gen. Robert Biddulph. A great part of the island is occupied by mountain ranges in a general direction of w. to east. One of the most lofty, and which fills the whole s. portion of the island, is generally called by modern geographers Mt. Olympus, but the ancients applied that name to only one particular peak. The highest summit so far as known is that of Mt. Troödos, 6,500 feet. The s. range terminates in the isolated peak of Oros Stavro, or hill of the Holy Cross, a conspicuous object from Larnaka, and evidently the one called Olympus by Strabo, although it is but 2,300 ft. high. The n. range is an unbroken ridge for 100 m., inferior in elevation to the other, its highest summits not exceeding 3,200 feet. Between these ranges is a broad plain extending across the island from the bay of Famagosta to that of Morphu on the w., about 60 m. long and from 10 to 20 m. wide. This plain is called the Messaria, and is watered by two streams. It is for the most part open and uncultivated, presenting nothing but barren downs, but corn is grown in some places, and the whole valley is doubtless susceptible of cultivation. The plain is bare of timber, and only the loftiest and central summits of Mt. Olympus retain their covering of pine woods. The climate varies in different localities; in the central plain and about Larnaka the heat is excessive, but is tempered by cool sea-breezes until about the middle of Sept., between which time and the end of Oct. is the hottest period. The winter is short and cold, but snow is seldom seen except upon high mountain peaks. Fevers are prevalent during the warm months.

In ancient times this island supplied the Greek monarchs of Egypt with timber for their fleets. It was also celebrated for its mineral wealth, especially for copper, a metal which takes its name (cuprium) from the name of the island. No copper mines are now worked. There was also considerable silver produced, and Pliny says the precious stones were found there. Salt, for which the island was noted in old times, is still produced in large quantities in the neighborhood of Larnaka and Limasol. It is said that gold and coal have been recently found. The principal vegetable productions are cotton, wines, and fruits; some tobacco is grown. Cultivation is easy, and the soil in many places is exceedingly productive, particularly at the foot of Mt. Olympus, and along the level land of the n. shore. The want of good harbors is greatly felt. The chief places of trade, Larnaka and Limasol, have only roadsteads; and Salamis, which was the chief port of antiquity, as well as Famagosta, which held that position under the Venetians, were only artificial harbors on an open sandy coast. The English have selected Famagosta as the most favorable place to construct a good harbor. The towns in Cyprus worthy of notice are, 1. Lefkosia, commonly called Nicosia, which since the time of the Lusignan kings has been the capital of the island; 2. Famagosta, on the e. coast near the ruins of Salamis, which was the chief port under the Venetians, and famous for the defense against the Turks in 1571, now having only a few hundred inhabitants; 3. Larnaka, on the s.e. coast on the site of the ancient Citium, now the chief place of trade, with 5,000 or 6,000 inhabitants; 4. Limasol, on the s. coast, some distance w. of the site of Amathus, the chief point for the export of wines; 5. Baffo, or Papho, on the site of the ancient Paphos, on the s.w. angle of the island, the seat of the Greek bishop; and, 6. Tzerini, or Tzerinia, the ancient Kerynea, which retains its old Venetian fortifications, but is an inconsiderable place.

The early history of this famous island is imperfectly known. It was certainly colonized at a remote period by the neighboring Phœnicians, who established the worship of Ashtaroth (called by the Greeks Astarte, and by them identified with their own Aphrodite), for which worship—better known as that of Venus, to whom a temple was built—the island was long celebrated. The Greeks settled there soon after the Phœnician colonization; and it is probable that the former soon obtained political supremacy, while the latter held influence over the manners and customs, arts, and religious rites, which were wholly different from those in Crete, Rhodes, or other Ægean islands. The first known fact in the history of Cyprus, is its conquest by the Egyptian king Amasis in the 6th c. b.c. In 525 b.c., however, there was a revolt against Egyptian and an acceptance of Persian rule, the island thenceforth becoming a tributary province of the Persian empire. As a proof of the island's great prosperity about this time, it is noted that Cyprus contributed not less than 150 ships to the Persian fleet under Xerxes. Evagoras, king of Salamis, succeeded in extending his authority over a great part of the island, 337 b.c., and became independent of Persia, but under his son the Persian rule was again enforced. After the battle of Issus, when Alexander advanced in Phœnicia, all the cities of Cyprus declared in his favor, and sent ships to assist him in the siege of Tyre. During this period, though the island was subject to Persia, the several cities enjoyed the privilege of local self-government. Their institutions, however, presented one marked difference from those of other Greek cities. They were governed by kings, of whom there were not less than nine in the island. The cities which were the seats of those petty monarchies were: Salamis, Citium, Amathus, Curium, Paphos,

Marium, Soli, Kerynea, and Lapathus. Idalium and Golgos, names celebrated in the history of the worship of Venus, appear to have been merely *sanctioes* or holy places. After the death of Alexander, the possession of this island, so important for its seemingly inexhaustible forests (it is now quite bare of trees), became an object of contention among his successors. After varying fortunes, it passed into the hands of Ptolemy of Egypt. But in 306 B.C. a great effort to recover it was made by Demetrius, son of Antigonus, who reduced the whole island and laid siege to the city of Salamis. The effort of Ptolemy, who came with a great fleet to raise the siege, gave rise to one of the most memorable naval battles of antiquity, in which the Egyptians were utterly defeated, and Salamis, with all the island, passed into the power of Demetrius. But Ptolemy recovered the island in 295 B.C., and thenceforth it continued to be one of the most valuable possessions of Egypt. More than once this island decided the sovereignty of the Nile kingdom. Finally, the aggressive Romans fixed their eyes on Cyprus; the tribune Clodius proposed its seizure in violation of all right or decency; and Cato was the reluctant instrument for consummating the outrage. About half a century before the beginning of the Christian era, there ensued a period of stagnation in which little is heard of the island. Cyprus is noticed in Acts iv., 36, where it is mentioned as the native place of Barnabas; and in Acts xi., 19-20, it appears prominently in connection with the earliest spreading of Christianity. When Paul was sent with Barnabas from Antioch on his first missionary journey, this island was the scene of their first labors. The most remarkable event in the history of Cyprus while it was under the Roman empire was a great revolt of Jews, who had established themselves there in large numbers, in which revolt the Jews, 117 A.D., are said to have destroyed not less than 240,000 of the other inhabitants. After the division of the Roman empire, Cyprus passed under the Byzantine emperors. In 646 the Arabs became masters and destroyed the city of Salamis. Two years later, the Greeks recovered sway; but in 802, it was again conquered by Haoun el-Raschid, who was soon compelled to relinquish it to the Byzantine rulers. In 1184, Isaac Comnenus made Cyprus an independent sovereignty. In 1195, Richard of England ejected Comnenus and put Guy de Lusignan in possession as compensation for the loss of Jerusalem, of which Guy had been appointed king. For three centuries, Cyprus had a succession of petty kings, who introduced the feudal system and other European institutions. After many attempts to secure control, the Venetian republic came into full possession of the island in 1487, and held the rule for about 80 years. In 1570, Selim II., sultan of Turkey, invaded Cyprus with 60,000 men, quickly subdued the country districts, took the capital (Nicosia) after a siege, and murdered 20,000 of its inhabitants. Famagosta held out for a year and then made a capitulation, which was of course immediately violated by the Moslem butchers, who slowly tortured to death the governor of the city. From that period, Cyprus has been a part of the Turkish empire. Two events only have disturbed the stagnation of that blighting rule; an insurrection in 1764, which was quickly suppressed, and a massacre of the Greek population in 1833. Under the Koran and the Crescent an island that should be the most enterprising, prosperous, and productive in all the east, is one of the most impoverished and worthless. See **ARCHÆOLOGY**.

CYRENAICS, a sect of philosophers founded by Aristippus of Cyrenaica, a pupil of Socrates, about 380 B.C. Their theory was that moderate and reasonable enjoyment was the great object as well as the best method of life. A century later Epicurus elaborated the same idea.

CYRENIUS, PUBLIUS SULPICIUS, a Roman proconsul (governor) of Syria at the time of the birth of Christ. He seems to have had two official terms—from 4 to 1 B.C., and from 6 to 11 A.D.

CYRIL, a professor in the ancient law college of Berytus, and one of the founders of the oecumenical school of jurists, opening the way for Justinian's legislation. He is called the great Cyril in distinction from C., a jurist who lived after Justinian. C. wrote a treatise on definitions, in which, according to a statement of his contemporary Patriarch, the subject of contracts was treated with superior precision and great method.

CYRILLA, evergreen trees and shrubs, of which some varieties are found in the southern United States. Under cultivation, some of these varieties are exceedingly ornamental.

CYRILLIC ALPHABET, a method of writing invented about 863 A.D. by St. Cyril. This, with certain modifications, is the alphabet now used in Russia.

CYRUS, a river in Asia. See **KURA**, *ante*.

CYTHÆRA. See **CERIGO**, *ante*.

CZARTORYSKI, the name of a Polish family of ancient lineage. **MICHEL FRYDORYK**, 1695-1775, was chancellor of Lithuania in 1752. His brother, **AUGUST ALEXANDER**, was the palatine of Red Russia, and accumulated great wealth. His son, **ADAM KAZIMIERZ**, was president of the diet which elected Poniatowski king. His wife was distinguished for beauty and poetic genius. Another member of the family, **ADAM JERZY**, 1770-1831, was prominent in the futile attempts at revolution in Poland.

CZERKA'SY, a t. of Russia, in the government of Kiev, on the Dneiper; pop. 13,311.

CZERMAK, JOHANN NEPOMUK, b. 1828; a Bohemian physiologist, the introducer of laryngoscopy and rhinoscopy into medical practice.

CZERNY, KARL, 1791-1857; a German composer who wrote a vast number of pieces. Liszt was one of his pupils. His *Practical School of Composition* is well known.

D

DABOLL, NATHAN, 1750-1818; a teacher in Connecticut, author of a famous school arithmetic. His son C. L. invented the fog-horn or fog-trumpet.

DACELO, a genus of the kingfishers, natives of Australia. One specimen is known as the laughing jackass, so called because of its harsh discordant note.

DACOITS, the name given to a class of men in northern India, who live by robbery and plunder. They were formerly employed in war by the native sovereigns. It is stated that one tribe alone, between 1818 and 1834, killed 172 persons and obtained plunder valued at \$575,000. Much has been done to break up the roaming bands, but they are not yet extinct in Bengal and Burmah.

DA COSTA, ISAAK, 1789-1860; a Dutch poet and theologian of Portuguese-Jewish descent, who claimed kindred with the celebrated Uriel d'Acosta. His principal poetical works are well known in Holland, and besides these he was the author of many theological works chiefly in connection with criticism of the gospels.

DADE, a co. in s.e. Florida bordering on the Atlantic ocean and Mexican gulf; 4,400 sq.m.; pop. '70, 85-13 colored. It is the wild swampy region of the Everglades. There is one good harbor near, cape Florida. Co. seat, Biscayne.

DADE, a co. in n.w. Georgia on the Tennessee and Alabama border, intersected by the Alabama and Chattanooga railroad; 160 sq.m.; pop. '70, 3,033-245 colored. It is a rough region, having iron, coal, and other minerals. Co. seat, Trenton.

DADE, a co. in s.w. Missouri, on the Sac river; 498 sq.m.; pop. '70, 8,683-204 colored. Agriculture is the main business. Co. seat, Greenfield.

DAGGETT, DAVID, LL.D., 1764-1851; b. Mass.; graduate of Yale, 1783. He was a jurist of eminence, held a number of local offices, and was chosen United States senator. In 1832, he was chief-justice of the supreme court of Connecticut.

DAGGETT, NAPHTHALI, 1727-80; b. Mass.; graduate of Yale, and professor of divinity in the college. He was president *pro tem.* for a year. When the British attacked New Haven in 1779, he was so badly treated by them that he never recovered. He published an account of the famous "Dark Day in New England."

DAGGETT, OLIVER ELLSWORTH, D.D., son of David; b. Conn., 1810; a graduate of Yale; Congregational pastor for 25 years in Canandaigua, N. Y.; then for three years professor of divinity in Yale college; afterwards pastor of the Second church, New London, Conn. He was one of the compilers of the *Connecticut Hymn Book*, and has written many articles in the *New Englander*.

DAGOBERT I., one of the early Frankish kings, d. 638 A.D. He was a son of Clotaire II., and after the death of his father he reigned over the whole of the Frankish dominions. His court was remarkable for magnificence, rivaling that of Constantinople. But he was noted for debauchery.

DAGUERRE, LOUIS JACQUES MANDÉ, 1789-1851; a French painter, in early life a revenue officer. He was especially successful as a scene painter for the opera, and afterwards in panoramic views on a large scale. He also opened a diorama in Regent's park, London. He lost heavily by a conflagration, but speedily re-established his fame on a secure basis by the invention of the daguerreotype, in which he was aided by Nicéphore Niepce. Daguerre became an officer of the legion of honor. The progress of his invention—forming permanent pictures on prepared surfaces by the chemical action of light—was for a long time slow and tedious; but improvements came, until now the photograph may be taken in an instant, and even a horse under full run is portrayed as if not in motion.

D'AGUESSEAU, HENRI FRANÇOIS, 1668-1751; chancellor of France. When little more than 21 years of age he was appointed one of the three advocates-general, and the eloquence and learning which he displayed in his first speech gained for him great reputation. In 1700, he was made procurator-general, and in 1717, advanced to chancellor. A year afterwards he was deprived of his office because of his firm opposition to the wild schemes of John Law. When more than 80 years of age, he retired from the duties of chancellor, still holding its rank.

DAHLGREN, JOHN ADOLF, 1809-70; b. Philadelphia; a distinguished officer in the U. S. navy, a midshipman in 1826. He served in Brazil and in the Mediterranean

squadron, and on the coast survey, being commissioned as a lieut. in 1837. Somewhat later he was engaged in the ordnance department, where he procured the adoption of the Dahlgren gun. He was the inventor of a rifled cannon, and introduced bronze howitzers. In 1855, he was made commander, and when the war of the rebellion began, he was in command of the Washington navy yard. In July, 1862, he was appointed capt., and chief of the bureau of ordnance. The next year, he rose to rear-admiral, and had command of the s. Atlantic and subsequently of the s. Pacific squadron. In 1869, he again took command of the Washington navy yard.

DAHLGREN, ULRIC, 1842-64; son of John Adolf; an early volunteer in the union cause when the war of secession broke out. He performed brave and distinguished services, and was killed in an effort to rescue the union soldiers confined in Libby prison.

DAHLONE'GA, a t. and co. seat of Lumpkin co., Ga., 60 m. n.e. of Atlanta, in the midst of a gold-mining region, remarkable chiefly for the mint established there, 1835, and abandoned in 1873. Pop. '70, 471-104 colored. Dahlonaga, Indian *Taulau-neca*, is an anglicized Cherokee name meaning dollar-yellow, in reference to the gold coinage.

DAILLE, or DALLÆUS, JEAN, 1594-1670; a learned Protestant divine, tutor to the grandsons of Plessis Mornay, and the author of a number of controversial works. He was president of the last national synod held in France in 1659.

DAIMIO, the official title of the feudal lords of Japan, having almost independent rule in their special provinces or districts; but modern changes have largely restricted their privileges and authority in the direction of the consolidation of the empire.

DAKOTA (*ante*) (meaning "leagued" or "allied," with reference to confederate Sioux tribes), a territory of the United States, organized 1861, bounded e. by Minnesota and Iowa, s. by Nebraska, w. by Wyoming and Montana, and n. by British America. Dakota lies between 43° and 49° n. and about 97° to 104° w., and has an area of 150,932 sq.m. In length Dakota is 414 m., and in breadth 360. The surface n. and e. of the Missouri river is in the main rolling prairie, in which are many streams and lakes, but no swamps or marshes. A single plateau (Coteau des Prairies), having an elevation of 1450 ft. above tide, runs along the e. margin of the territory more than 200 m., with a width varying from 15 to 20 m.; and in the middle and in the n. portion there is a similar though smaller elevated region. There are no mountains in Dakota the Black hills in the s.w. corner being the most important elevations. These hills, extending into Wyoming, cover about 6,000 sq.m., and their bases are nearly 3,000 ft. above tide; the highest peaks are under 7,000 feet. In the basin of the Red river of the North there are vast plains covered with grass affording pasturage and winter feed in abundance. In the Black hills region there are extensive forests of pine and other useful timber, and in nearly all sections there is timber enough for the ordinary demands of settlers. In the s. and s.w. between the Big Cheyenne and White rivers is a large tract called the "Bad Lands" (*Mauvais Terres*), entirely barren, and furrowed into countless forms by the action of water upon the blue-clay formation. Over the plateaus and prairies are scattered isolated buttes (summits) from 500 to 1500 ft. high.

The Missouri river divides Dakota into nearly equal parts, coming in from the n.w. at about 48° n. and 104° w., and passing out at the extreme s.e. corner, forming the southern boundary for about 100 m. In its course through Dakota the Missouri receives from the w. the Yellowstone, Little Missouri, Big Knife, Heart, Grand, Moreau, Big Cheyenne, White, and Niobrara rivers; from the n. and e. it gets Little Muddy, White Earth, Beaver, Little Cheyenne, Dakota, Vermilion, and Big Sioux. On the e. border of Dakota rise the head-waters of the Minnesota, an affluent of the Mississippi; and the n.e. part of the territory is drained by the Red river of the North and its tributaries, the main river forming more than half the eastern boundary. This river is navigable for about 200 m. in Dakota, and the Missouri is navigable throughout. Dakota is remarkable for the great number of lakes in the eastern half of its territory. The Mini Wakan, or Devil's lake, is the largest, covering more than 250,000 acres; others of considerable size are Thompson, Long, Traverse, Big Stone, Turtle, Wood, Tehanikanah, and Pembina. In temperature, Dakota, though very cold in winter, is on the whole favorable for agriculture. In the n. the winters are long, but all crops except Indian corn ripen easily. In the s. the climate is delightful, and the usual crops and small fruits are easily raised. Agriculture is the chief industry, but some manufactures are already established.

A century ago all these northern and western regions were the resort of fur traders, trappers, and hunters, and the business of fur hunting is still important. In the n. portion of Dakota, buffalo, elk, moose, and deer are found; also black and cinnamon bears, wolves, lynxes, badgers, wolverines, foxes, prairie dogs, rabbits, gophers, and squirrels. Birds are abundant in a great variety of species, and the waters are well supplied with fish.

Yankton, on the Missouri river at the extreme s. border of Dakota, is the capital, and the largest town; Pembina, 425 m. directly n. of Yankton, and on the boundary between Dakota and Manitoba, is the oldest town and one of the most important. Until the set-

tlement of the boundary between the United States and British America, it was, under English rule, the center of the famous Selkirk settlement. There are several important military posts on the w. frontiers of Dakota. Indian reservations take up about 60,000 sq.m. of the territory. The Yankton Sioux has 625 sq.m.; the Sisseton, 2,000 sq.m.; the Sioux, in all, 40,000 sq.m.; the Poncas, 500 sq.m.; and the Arikaraes, Mandanas, and Gros Ventres, 13,500 sq.m.

At the beginning of 1879 there were five railroads in operation or in progress—the Northern Pacific, from Eismark to Duluth, Minn., 195½ m.; Dakota Southern, from Sioux City to Yankton, 55½ m.; Winona and St. Peter, from lake Kampeska to Winona, Minn., 38½ m.; Sioux City and Pembina, from Pembina to Beloit, Iowa, 15½ m.; Worthington and Sioux Falls, from Sioux Falls to Sioux Falls Junction, Minn., 15 miles.

In 1873, the territory had 10,459 children of school age (5 to 20 years), of whom 5,410 were enrolled, with 257 teachers, and \$22,504 yearly cost of schools. (For latest statistics, see Appendix.)

DAKOTA, a co. in s.e. Minnesota, on the Mississippi, intersected by four or five railroads; 550 sq.m.; pop. '75, 17,500. The productions are chiefly agricultural, and the soil fertile. Co. seat, Hastings.

DAKOTA, a co. in n.e. Nebraska, bordering on Dakota and Iowa, and bounded e. by the Missouri; 400 sq.m.; pop. '76, 3,000. The surface is rolling prairie; and the soil fertile. Co. seat, Dakota.

DAKOTA RIVER (also called JAMES river), a stream of Dakota territory, of about 600 m. length, emptying into the Missouri below Yankton.

DAKOTAS, North American Indians residing or wandering between the Mississippi and the Rocky mountains. They believe that their ancestors came eastward from the Pacific, and their language is said to resemble Mongolian. They have had many wars with the Algonquins and the Illinois. At present they form a dozen tribes, known as Osages, the Poncas, the Iowas, etc.

DALE, a co. in s.e. Alabama, on the Choctawhatchee river; formerly (until divided) 900 sq.m.; pop. '70, 11,325—1797 colored. It is a sandy and unproductive region. Co. seat, Newton.

DALE, DAVID, 1739—1803; a Scottish manufacturer who secured the use of Arkwright's spinning patent, and founded the New Lanark mills, and subsequently other important establishments, becoming very rich, and noted for benevolence. Robert Owen married his daughter and succeeded him in the Lanark mills. Dale was the pastor of a church in which grew up a peculiar sect of Scotch independents who called themselves "Dalites."

DALE, RICHARD, 1753—1826; an American naval officer, who, after joining the English service in the beginning of the revolution, went over to his own country and served under Paul Jones. He was several times taken prisoner. After independence he was appointed captain, and had command of the squadron sent against Tripoli. He resigned in 1802.

DALIN, OLOF VON, 1708—62; a Swedish poet, who, at the age of 24, began his literary career by starting the *Argus*, a journal in imitation of Addison's *Spectator*. He published a vast number of sketches, poems, etc. In 1756, he was tutor to the crown prince, and was arrested and tried on suspicion of having taken part in the attempted revolution of that year. He was acquitted, but was exiled for five years. He was afterwards ennobled and made a privy-councilor. His great work was a *History of the Swedish Kingdom*.

DALLAS, a co. in s.w. Alabama intersected by the Alabama river and two railroads; 820 sq.m.; pop. '70, 40,705—22,152 colored. The chief productions are corn and cotton. Co. seat, Cahawba.

DALLAS, a co. in central Arkansas, on Saline river; 700 sq.m.; pop. '70, 5,707—1751 colored. The chief productions are agricultural. Co. seat, Princeton.

DALLAS, a co. in central Iowa intersected by two railroads; 576 sq.m.; pop. '70, 12,019. Agriculture is the chief business. Co. seat, Adell.

DALLAS, a co. in central Missouri; mostly wild land; 576 sq.m.; pop. '70, 8,233—89 colored. Productions, agricultural. Co. seat, Buffalo.

DALLAS, a co. in n.e. Texas, drained by Trinity river; 900 sq.m.; pop. '70, 13,314—2,109 colored. It is fertile, well watered, and with good timber. Agriculture is the main business. Co. seat, Dallas.

DALLAS, ALEXANDER JAMES, 1759—1817; born in the island of Jamaica, died in Trenton, New Jersey; a lawyer of Pennsylvania and author of reports on law cases and decisions. He was the projector of the United States bank at the time when the nation was in great trouble about currency to carry on the war with England. He was also secretary of the treasury, and acting secretary of war, superintending the reduction of the army after peace.

DALLES CITY, or THE DALLES, the co. seat of Wasco co., Oregon, on the Columbia river, 120 m. e. of Portland. Pop. '70, 942.

DALLING AND DULWER, Baron. See DULWER, SIR HENRY LYTTON, *ante*.

DALL' ONGARO, FRANCESCO, 1808-73; an Italian poet and dramatic author. He aided in organizing the Garibaldi legion in Rome, and on the capture of the city by the French he went to Ancona, and afterwards to Switzerland. From the latter refuge he was expelled, and spent four years in Belgium. Some years afterwards he returned to Italy and became professor of literature in Milan and Naples. He became noted as a writer of works of fiction.

DALTON, a t. in Whitfield co., Ga., on the East Tennessee, Virginia and Georgia, the Western and Atlantic, and the Selma, Rome, and Dalton railroads, in a beautiful valley surrounded by mountains; pop. about 4,000-429 colored. It was a place of strategic importance during the rebellion.

DALTON, EDWARD BARRY, 1834-72; b. Mass.; a physician in California; graduated at Harvard, 1855, and at the New York college of physicians and surgeons, 1858. He served as medical director in the army of Virginia during the rebellion, and afterwards in the army of the Potomac. In 1863, he became sanitary superintendent of the New York board of health. He died in California. His medical reports are valuable.

DALTON, JOHN CALL, b. Mass., 1825; professor of physiology in the medical department of the university of Buffalo, where he began (in this country) the illustration of surgery by vivisection. He served as a surgeon in the union army during the war of the rebellion. His medical papers are numerous and valuable.

DALTONISM. See COLOR-BLINDNESS, *ante*.

DALY, CHARLES P., LL.D., b. New York city, 1816; for many years a leading jurist, being chief-justice of the court of common pleas. He has published *History of the Courts of New York*, and many legal papers of importance. He is president of the American geographical and statistical society, in which he has taken a deep interest.

DAM, TINKER'S, a guard of dough or clay placed by a tinker around a cavity to confine the melted metal until it "sets." It is worthless after use.

DAM (Fr. *barrage*), a barrier for raising the level of water in a stream, for the purpose of forming a reservoir, or for turning the water in another direction. Several dams are sometimes placed upon a water-course for the purpose of preventing too rapid an escape of water where it is needed for irrigation or for moving machinery. There is also a variety of dam called a coffer-dam, in which an inclosure is bounded by a barrier which prevents exterior water from entering, used generally for the purpose of excavation. Dams constructed for raising the level of water have an important use in the slack-water navigation of rivers. The materials which enter into the construction of dams differ according to circumstances. If the structure be required to bar a narrow gorge and a considerable stream, it must be made very strong, not only to withstand the hydrostatic pressure, but also the force of the current, which often, during freshets, becomes very great. The materials are then generally composed of a combination of wood-work and masonry. Masonry may be principally used when the gorge is so narrow as to allow of the construction of a sufficiently small horizontal arc to resist the pressure. When the dam is very long (across a wide stream), unless a vast amount of stone is used, wooden braces must be employed. Where the body of water to be restrained is not more than 4 or 5 ft. deep and the bottom is firm, a clay or stiff loam embankment 9 or 10 ft. thick, well compacted, will answer the purpose if a gate be provided to keep the water from flowing over the top of the embankment, which would cause it to wear away. It is not always economy to build the dam in the narrowest part of a stream, or where the opposite banks nearest approach each other. This will often cause during a freshet too great a depth of running water over the dam, by which it may be endangered. A point should be selected where the dam can be made of sufficient width to allow the water to pour over it without piling up too much, and where the foundation is good. The line of a dam may be transverse or diagonal to the flow of water. The diagonal is sometimes of advantage in increasing the width of flow, but is liable to interfere with the bed of the stream below more than the transverse line. Where practicable, the form of an arc, the convexity fronting up stream, is the best; but a broken line may sometimes be employed to advantage, the angles pointing up stream acting as braces, while the angles pointing down stream may be held by natural rock formation or heavy masonry, strengthened by bracing. There are a great many large dams in the manufacturing districts of New England, and in freshets, the giving way of some of them through faulty construction, has caused great destruction of life and property.

An example of a well-constructed dam is at Holyoke, Mass., across the Connecticut river. It is 1017 ft. long and 30 ft. high. The braces are formed of large square timbers inclined 22° from the horizontal, with the lower ends bolted in the rock, and the upper ends sustaining timber frame-work. The canal for delivering the water, which is received by thirteen gates, is faced with masonry, and is 144 ft. wide at the top, and 22 ft. deep. It is said to be the best water motive-power utilized in the United States. A

remarkable dam exists across the river Eure, in France, for protecting the town of St. Etienne from freshets, and also for supplying the town with water. It is 164 ft. high, and 328 ft. wide at the top. The excavations for the foundation were very great and expensive, and the dam was constructed entirely of masonry, the stone laid not in tiers, but so as to produce a unity of mass, and with hydraulic cement, which is the mortar always used. The pressure of the contained water, at the depth of 154 ft., as much as 67 lbs. to the square inch, has sometimes been sufficient on this dam to force water through the pores of the material. In India, dams are constructed for purposes of irrigation, and some of them are of enormous magnitude. One of the longest is on the Godavery river at Dowlaisweram. Its total length is 4,872 feet.

A good example of the mode of constructing a coffer-dam under great difficulties, on account of quicksand bottom, was furnished in the work preliminary to the building of the dry-dock at the Brooklyn navy-yard. There was over 60 ft. of utterly unstable micaceous sand below the mud at the bottom of the river. This of course, under so great pressure, would flow almost like water itself. The area required to be excavated through this material was over two acres at the top and one acre at the bottom, which was 37 ft. below mean high water. The first attempt was a failure, and longer and stronger piles were then used, filled between with stone and coarse gravel. There were six concentric rows of piles, the walls being over 60 ft. thick.

Where the bottom does not admit of pile-driving, crib-work, weighted with stone and sunk in proper position, is used, the crevices being stopped with hydraulic cement. At Blossom Rock, in San Francisco harbor, a combination of crib-work and iron cylinder was used in the construction of the coffer-dam by means of which the excavations were made, preparatory to blasting. An iron cylinder 6 ft. in diameter, armed with thick india-rubber flaps at the bottom, was sunk to the ground and then surrounded with crib-work. Excavation was then made within the cylinder, which was from time to time depressed until the depth was reached necessary to exclude the water.

DAMAGES (*ante*), a term which designates the rules which govern pecuniary awards in a court of justice. The principles are general, and substantially the same in all countries. The chief principle is to give compensation for some right violated. There is necessarily a wide margin for opinion and judgment in all such cases, depending largely upon agreements and fortuitous conditions and circumstances. In general, damages are compensatory only, but in some cases they are punitive or exemplary.

DAMASCENUS, **NICOLAUS**, a Greek historian of the time of Augustus and Herod the great, with whom he was on terms of intimacy. His principal work was a universal history in 144 books, of which only a few fragments remain. He also wrote an autobiography, in which much may be learned of the lives of Augustus and of Herod.

DAMASCIUS, a philosopher b. at Damascus about the middle of the 5th century. He taught philosophy in Athens in the time of Justinian. There remains of his works only *Difficulties and Solutions of First Principles*.

DAMASCUS BLADE. See **DAMASKEENING**, *ante*.

DAMASUS II., a native of Bavaria, a bishop in the Tyrol, chosen the 155th pope on the death of Clement II., in 1047. His reign lasted but 23 days.

DAMIANI, **PIETRO**, 1000-72; a Roman Catholic prelate, eminent, intellectually, and morally, who supported various reforms which Hildebrand (the great pope, Gregory VII.) also favored, for which he was persecuted by the corrupt priests of Milan. He was appointed cardinal bishop of Ostia, 1057. In 1069, he was sent as legate to Germany to dissuade Henry IV. from applying for a divorce, in which he was successful. He was engaged on other occasions to make peace and suppress disorder. Among his writings is a fine religious hymn in Latin.

DAMIANISTS, or **ANGELISTS**, a sect of the 6th c., followers of Damianus, a patriarch of Alexandria, who agreed substantially with the Sabellians.

DAMIR (Kemâl ud-den Abu'l Bagâ Muhammed Ben Musa Ben Isa ad-Damîrî Ash-Skafî), 1341-1405; b. Cairo, Egypt; an Arabian writer on canon law, but better known to Europe by his work on natural history, *The Life of Animals*, in which he catalogues 931 beasts, birds, fishes, and insects, with the habits of which he appears to have been acquainted. The work is full of episodes treating of history and religion, in consequence of which its literary value is much increased.

DAMIEN, **JEAN PHILIBERT**, 1794-1862; a French philosophical writer who studied under Burnouf, Villemain, and Cousin. He lectured on philosophy in various Parisian institutions, became professor in the normal school, and titular professor at the Sorbonne. He was one of the founders of the *Globe* newspaper, a member of the legion of honor, and of the academy of sciences. He published a number of philosophical works, particularly on the history of philosophy in France.

DAN, a city, the position of which, at the northern extremity of Palestine, is determined: 1. By its being the northern point on the road to Damascus, at which Abraham overtook the allied forces that had plundered Sodom. 2. By its frequent designation as the northern limit of the land, as in the familiar expression—"from Dan to Beersheba." 3. By the statement of Josephus, that it stood at the lesser fountain of the

Jordan; and that of Jerome, that at it the Jordan took its rise, and, as he thought from his view of the etymology, obtained its name Jor-Dan, as "the river of Dan." 4. By Dr. Robinson's discovery, in the same locality, of "a mound from the foot of which gushes out one of the largest fountains of the world—the main source of the Jordan," the signification of whose Arabic name, *Tell el Kadi*, "the judge's mound," agrees with that of the Hebrew *Dan*, "a judge." The manner in which the tribe of Dan acquired possession of this region is narrated in the book of Judges. Their inheritance by lot was well situated near the powerful tribes of Judah, Benjamin, and Ephraim; but the most fertile part of it was too small for them, and was often overrun by the Amorites and Philistines. In order to enlarge their territory they sent out spies to search for a fertile region which they might obtain by force or craft. These having gone to the north, reported that they had found there a large and good land abounding in supplies for every want, and inhabited by a people careless and secure. So the tribe, having arrayed itself for war, fell suddenly on the coveted region, putting the inhabitants to death and burning the city. When they rebuilt it they changed its name from Laish to Dan after their father. The subsequent history of the city is peculiar. The Danites stole not only the good land and the city, but also the religion which they established there. On their way north they found in Mt. Ephraim a house in which was a priest of the tribe of Levi, with an ephod and teraphim, a molten and a graven image. All these they carried away with them and set up the idolatrous worship under a permanent priesthood in their conquered home. Four hundred years afterwards Jeroboam remodeled the worship, making Dan the religious center for the northern part of the kingdom which he had usurped. This it continued to be until, about 250 years later, the people were carried captive into Assyria. At the present day the top of the mound is strewn with ruins, including traces of old foundations and heaps of large stones. There are ruins also on the plain below. The fertility of the plain or valley, remarkable in the times of the Sidonians, continues to the present day.

DAN, the fifth son of Jacob and the first by his wife's maid Bilhah. He was own brother to Naphtali, and there is a close affinity between his name and that of Dinah, Jacob's only daughter. The tribe of Dan was, next to Judah, the most numerous of the twelve tribes at the numbering in the wilderness; yet he was the last of all to receive his portion of the land, and that portion was the smallest of all. The Bible gives but little of the history of the tribe, which seems to have been easily and often led to copy the idolatry of the surrounding heathen.

DANA, CHARLES ANDERSON, b. N. H., 1819. He studied at Harvard for two years, but an affection of the eyes compelled his retirement. He was one of the members of the Brook Farm socialistic community, near Boston, and was one of the editors of *The Harbinger*, a journal advocating the ideas of Fourier. In 1847, he became a writer on the *New York Tribune*, and was correspondent of that journal in France during the revolution of 1848. Returning to New York, he became first assistant (or managing) editor of the *Tribune*, which position he filled until about the close of 1861, when the "On to Richmond" editorial, immediately followed by the disastrous defeat of the union forces at Bull Run, led to such disagreement with Horace Greeley, the editor of the paper, that Dana was compelled to resign. He was not long afterwards appointed assistant secretary of war. After the war he became the editor of a new republican paper in Chicago, but the enterprise was not successful. Returning to New York, he became one of a company to purchase *The Sun*, the oldest of the cheap papers of the country. He was chosen chief editor, which position he retains. Besides his work as a journalist, he has edited a *Household Book of Poetry*, and in connection with George Ripley has been the editor of Appleton's *New American Cyclopædia*.

DANA, FRANCIS, LL.D., 1743-1811; b. Mass.; graduate of Harvard; admitted to the bar in 1767. He was one of the "Sons of Liberty" in and about Boston at the commencement of the revolution. He was a delegate to the first provincial congress of Massachusetts, and in 1776 was chosen one of the council who at that time acted not only as a senate, but as the executive of the state. In 1781, he was appointed minister to Russia. He returned in 1784, and was at once sent to congress. In 1785, he was appointed justice of the supreme court of Massachusetts. He was a delegate to the Annapolis convention, to the convention which framed the federal constitution, and to the convention in his own state for its ratification. In 1791, he was made chief-justice of Massachusetts. In 1797, he was appointed special envoy to the French republic, but declined on account of ill health. He was one of the founders of the American academy of arts and sciences.

DANA, JAMES DWIGHT, LL.D., b. N. Y., 1813; graduate of Yale, eminent as a naturalist and geologist. He was with the Wilkes exploring expedition to the southern oceans sent out by the federal government in 1838. In 1846, he became one of the editors of the *American Journal of Science*; in 1855, he was chosen professor of natural history and geology in Yale college. His works on geology and natural history are well known.

DANA, NAPOLEON JACKSON TECUMSEH, b. Me., 1822; graduated at West Point in 1842. He served in the war with Mexico, and through the war of the rebellion, and was seriously wounded at Antietam. Soon after the war he resigned with the rank of col.

DANA, RICHARD, 1699-1772; b. Mass., grandson of Richard, who was the first of the family in America. He was a graduate of Harvard, bred to the law, and prominent in resistance to the acts of the British government which preceded the revolution. He was also a member of "The Sons of Liberty."

DANA, RICHARD HENRY, JR., b. Mass., 1815; a son of Richard Henry, the poet, graduated at Harvard, and bred to the law. In consequence of ill health he made a voyage at sea, of which he published a description in *Two Years Before the Mast*. He was admitted to the bar in 1840, and made a specialty of admiralty cases. In 1841, he published *The Seaman's Friend, containing a Treatise on Practical Seamanship*, and also an edition of Wheaton's *International Law*. He was one of the leaders of the free-soil party.

DANA, SAMUEL LUTHER, LL.D., 1795-1868; b. Mass.; a writer on chemistry and agriculture. While chemist of the Merrimack print-works he invented a method of bleaching cotton goods which was widely adopted.

DANAIDE, a hydraulic machine made of two cylinders one within the other, turning easily on a vertical axis, and having a small space between them. The smallest one is closed at the bottom, and the other has a hole in the middle of its base. The bottoms of the two are separated by partitions reaching from the circumference to the center, but the ring-like space between the cylinders is open. If water be turned into this space horizontally to the surface of the cylinders, they begin to revolve by friction, which motion is increased by the water in revolution acting on the radial partitions in the base. It is found that nearly three quarters of the hydraulic power can thus be utilized.

DANBURY, a t. in Connecticut, the seat of justice of Fairfield co., on the Norwalk and Danbury railroad, 68 m. n.e. of New York; pop. '70, 6,542. There is ample water power, with a large number of manufacturing establishments, one of which makes nearly a quarter of a million of shirts annually. Danbury was settled, 1684, and burned by the British, 1777, when the American gen. Wooster was fatally wounded. A monument was erected in his memory 77 years later.

DANCE, GEORGE, JR., 1740-1825; an English architect. Among his designs was that for Blackfriars bridge in London. He was associated with his brother Nathaniel in the foundation of the royal academy, of whose original members he was for several years the last survivor. Newgate prison and the front of Guildhall were built from his designs. His father, also named George, was noted as an architect.

DAN'DOLA, ANDREA, Doge of Venice, 1342, a member of one of the most illustrious families of that famous city. He was a student and a man of letters, and an intimate friend of Petrarch. He wrote two chronicles of Venice.

DAN'DOLO, VINCENZO, Count, 1758-1819; an Italian scientist, native of Venice, where he began life as a physician. When Venice came under Austria, he went to Milan, where he became a member of the grand council. He went to Paris in 1799, but soon afterwards returned to the vicinity of Milan and engaged in scientific agriculture. In 1805, Napoleon made him governor of Dalmatia, where he proved himself an excellent officer. He published several works on agriculture. In 1809, he retired to private life in Venice.

DANE, a co. in s. Wisconsin, intersected by five or six railroads, the co. seat (Madison) being the capital and the great railroad center of the state; 1235 sq.m., pop. '70, 53,096. It is mostly prairie, and the soil is fertile, producing wheat, corn, oats, barley, hay, butter, wool, tobacco, hops, etc.

DANE, NATHAN, LL.D., 1752-1835; b. Mass.; graduated at Harvard, 1778; studied law in Salem, and began to practice in 1782 at Beverly. He was successively a member of the Massachusetts house of representatives, the continental congress, and the Massachusetts senate; then held various commissions to codify or revise laws; and was judge of common pleas. He was also a member of the much abused Hartford convention. He is credited with placing in the ordinance for the government of the north western territory the clause forever prohibiting slavery.

DANIEL, HERMANN ADALBERT, 1812-72; a German geographer and theologian, educated at Halle, and subsequently became a professor at that university. He was one of the most eminent followers of the geographer Ritter.

DANIEL, BOOK OF, derives its name from the chief person whose history it narrates, and who is generally regarded as its author. The close correspondence of its predictions with historical events has, indeed, led some writers to assert that it was written by some unknown person about 175 years B.C. Porphyry, in the 3d c., held this opinion, and, in modern times, Collins, De Wette, and others. Among the answers to them are: 1. That however plausible, in Porphyry's day, the assertion may have seemed that the so-called predictions of the book were written after the events in the life of Antiochus, to which some of them refer, there is no force in it now, after the progressive accomplishment, which has since been witnessed, of many predictions then unfulfilled. 2. The first book of Maccabees refers to the book of D. in the same manner as to other books of the Old Testament, saying that the enemies of the Jews "set up

the abomination of desolation upon the altar:" that "Ananias, Azarias, and Misael, by believing, were saved out of the flame," and that "Daniel, for his innocency, was delivered out of the mouth of lions." 3. It was translated into Greek, B.C. 280-250, before the date which Porphyry assigned to it. 4. At a still earlier date it was received into the Hebrew canon. 5. Its diction, partly Hebrew and partly Chaldaic, proves that its author was master of both languages; its acquaintance with Chaldean manners, customs, and religion, indicates his long residence in the midst of them; and its descriptions of public affairs after the conquest by the Medes and Persians could have been given only by one who had full knowledge of the conquerors and was in favor with them. Daniel, a Jew of noble birth, familiar with the Hebrew as his native tongue, educated from his youth in all that the Chaldeans could teach, and high in office and favor with the successive kings through the whole captivity of 70 years, fulfills all these conditions, and he alone. 6. The great favors which Alexander, in the midst of his career of conquest, conferred on the Jews at Jerusalem, are rationally accounted for by the statement in Josephus that when, at the temple, the book of Daniel was shown to him, wherein Daniel declared that one of the Greeks would destroy the empire of the Persians, he supposed himself to be the person intended, and in his joy called on the people to ask of him any favors which they chose. 7. The testimony of Christ is emphatically given to the book of Daniel, to its prophetic character, and to the approaching fulfillment of things written therein. Its place in the Hebrew canon is not among "the prophets" strictly so called, but in the same division with "the Psalms." The prophets were God's ministers among the people at large to instruct, comfort, and reprove, as well as to foretell the future. Daniel's office, as has been seen, was rather that of a statesman, clothed with vice-royal authority by the kings who held him captive, and made conspicuous by the manifest wisdom and power of God. He ranks with Moses and David rather than with Isaiah. His personal prosperity, the miracles wrought around him, and the revelations given him, were designed to show, among other things, that although God had allowed the Jews to be carried captive for their sins, his power, as great as it ever had been, was concentrated on Daniel as their representative, and as a pledge that he would restore them to their own land. Their release by Cyrus at the end of their 70 years is without rational explanation if Daniel's life and influence as described in the book are stricken out. The book is partly historical and partly prophetic; and portions of the history are prophecies fulfilled.

I. The historical part narrates: 1. The captivity of Daniel and his three friends, their education at the court of the king, and their superiority over the rest of the Hebrew youth. 2. The king's dream, Daniel's interpretation of it, and the consequent exaltation of him and his friends. 3. The golden image, the fiery furnace, and the deliverance. 4. The king's second dream and its interpretation, his pride, loss of reason, expulsion, and restoration. 5. Belshazzar's feast, the writing on the wall, the doom declared, the city captured, and the king slain. 6. Daniel's exaltation in the kingdom of Darius, the conspiracy against him, the den of lions and his safety there. 7. His prosperity continued during the reign of Cyrus. II. The prophecies in the book are: 1. Concerning the four kingdoms under the emblem of the image in Nebuchadnezzar's dream: its *golden head* representing the Babylonian; its *silver arms and breast*, the Medes and Persians, becoming one; its *brazen loins and thighs*, the Greeks under Alexander, divided after him into two eastern kingdoms, Egypt and Syria; its *iron legs*, the Romans, consisting of two parts—the senate and people, and led by two consuls; its *toes of iron and clay*, the kingdoms of Europe, having both the strength of Rome and the weakness of barbarous tribes; the *stone cut out without hands and smiting the image*, the kingdom of Christ commenced and advanced without human power and destined to subdue the world and continue forever. 2. These kingdoms were represented again in Daniel's vision by four wild beasts coming out of the sea, and explained by the angel as denoting four kingdoms rising out of tumults and wars: (1) The lion with eagle's wings was an emblem of Babylon; (2) The bear with three ribs between its teeth denoted the Medes and Persians conquering Babylon, Lydia, and Egypt; (3) The leopard with four wings and four heads represented the kingdom of Alexander, famous for the swiftness with which it was conquered, and divided after his death into four parts; (4) The fourth beast was great, terrible, and strong, and represented the fourth kingdom, diverse from all others, devouring the whole earth, treading it down, and breaking it to pieces; but finally to be judged and destroyed, and to be followed by the kingdom of the Most High that shall endure forever. 3. The vision of a ram, attacked by a goat rushing from the W. without touching the ground, represented the kingdom of the Medes and Persians overthrown by Alexander advancing from Macedonia with unequalled swiftness. When the goat was strong its horn was broken, and in its place came up four, pointing towards the four winds. And when Alexander was at the height of his power he suddenly died, and four kingdoms were formed out of his dominions. 4. The prophecy concerning the 70 weeks—interpreted as 490 years, each day signifying a year—revealed to Daniel by the angel Gabriel, measured off the time between the going forth of the commandment to rebuild Jerusalem and the coming and death of the Messiah. This period is subdivided into three—7 weeks, 62 weeks, and 1 week. During the *first* the city and wall would be rebuilt; at the end of the *second* the Messiah would come, and in the middle of the *third* he would be cut off. During

the third period, both before his death and after it, he would establish the covenant with many; and afterwards desolation would come on the temple and city. 5. The final revelation given to Daniel was from the lips of the Son of God appearing in the similitude of a man. Beginning at the point of time where Daniel then stood, he numbered the kings of Persia who were afterwards to arise, announced the expedition of Xerxes against Greece, and gave a condensed summary of human history onward to the resurrection of the dead to everlasting life or everlasting shame.

DANIELL, THOMAS, 1749-1840; an English landscape painter. He made a journey through India, taking a great number of important sketches. He published *Views of Calcutta*; *Oriental Scenery* (144 plates); *Views in Egypt*; *Picturesque Voyage to China*, etc. He was a royal academician and fellow of several other societies. His nephews, William and Daniel, were also artists of repute, the former assisting in the India sketches, and the latter spending many years in Ceylon.

DANISH LANGUAGE AND LITERATURE. The original language of Denmark was the pure Scandinavian or Icelandic, but it has been transformed by foreign admixture, chiefly German, until the original features are nearly lost. The changes, beginning in the 12th c., culminated at the period of the reformation, and the language is now regarded as one of the richest of the European tongues. The literature of the country has had a remarkable development, and is of great interest not only to readers in general, but to scholars in all parts of the world. Excepting a medical treatise published in the 13th c., the oldest literary production of the country is a collection of 500 ballads, by unknown authors, celebrating the achievements and adventures of the chivalric age, and written in the 13th and 14th centuries. They are of great merit, historical as well as poetical, and, being handed down at first by tradition, have lately been edited and published in an exhaustive edition by Svend Gruntvig. The first printing press was set up in Copenhagen in 1490 by Gottfried of Gheman, and in 1495 was printed the first book, a history of Denmark in verse. Next, in 1506, appeared a collection of proverbs by Peder Lolle, and eight years later, three sacred poems by Mikkel, priest of St. Alban's in Odense. These and many other works were published in Latin. It was not until the period of the reformation that the literary spirit of Denmark began to utter itself in the native tongue. Christian Pedersen translated the Psalms of David and the New Testament, printed 1529; and, in co-operation with bishop Paladin, the Bible, which appeared in 1550. The first authorized Psalter was published in 1559. Among the other authors of this early period may be mentioned Arild Hvitfeldt, historian; Hieronymus Rauch, dramatist; Anders Arrebo, bishop of Trondhjem, father of Danish poetry; bishop Erik Pontoppidan, author of the first systematic analysis of the Danish language; Brigitta Thott, a lady who introduced to the Danes the writings of Seneca and Epictetus; Thomas Kingo, of Scotch descent, and Hans Adol Brorson, eminent hymn-writers. Ludvig Holberg, born 1684, was a historical and dramatic writer of great eminence, whose productions retain their interest and charm at the present day. He is sometimes called the founder of Danish literature. His comedies, for the age in which they were written, are remarkably pure in tone and sentiment. Joannes Ewald was the most eminent Danish poet of the 18th century. One of his productions, *The Fishers*, contains the Danish national song. Werner Abrahamson, critic; Johan Clemens Tode, scientist; Ove Malling, Peter Frederik Suhm, and Ove Guldberg, historians; Bastholm and Balle, theologians; and Niels Treschow, in the department of philosophy, were also among the writers of the 18th century. After the time of Wessell and Ewald, poetry languished, but prose received a new impulse. The most eminent prose writers of the period were Peter Andreas Heiberg, political and æsthetic critic; O. C. Olufsen, scientist; Rasmus Nyrup, statistician and critic; Englestoft, historian; bishop Mynster, theologian; and Hans Christian Oersted, scientist. With the beginning of the present c., a new school of poets and novelists arose who won a high reputation in all parts of Europe. The herald of this school was Adolph Schack Staffeldt, a man who united with great seriousness and depth an exquisite taste in language. He was followed by Adam Gottlob Oehlenschläger, the greatest poet of Denmark, in whose verse the old Scandinavian mythology was imbued with fresh life; Steen Steensen Blicher; Nikolai Frederik Severin Grundtvig; Bernhard Severin Ingemann, the first to introduce the historical novel in Denmark; Johan Ludvig Heiberg, poet and dramatist; the countess Gyldenbourg, novelist—a woman of remarkable power; Christian Winther, pastoral lyricist; Hans Christian Andersen, whose works are popular in England and America; Frederik Paludan Müller a poet of great reputation. In philology, the names of Rasmus Christian Rask and Christian Molbeck are eminent, as is that of Niels Matthias Petersen in history. Joachim Frederik Schouw was an eminent botanist; Søren Naby Kierkegaard was a philosophical writer of much originality. Peter Thun Foersom made an excellent translation of Shakespeare. The greatest living geologist in Denmark is Johannes Japetus Smith Steenstrup. Jens Jacob Asmussen Worsaae is an eminent antiquarian; and Nikolai Madvig is celebrated as a philologist. Vilhelm Thomsen has acquired distinction by his researches into the Slavonic tongue. In the fine arts there are some eminent Danish names. In painting, there may be mentioned Abilgaard, Juel, Eckersberg, Marstrand, Vermehren, Exner, Dalsgaard, and Skovgaard. In sculpture, it is necessary only to mention the name of

Thorwaldsen, whose works adorn the museum at Copenhagen. The Danes are a musical people, and their first great composer was Christoph Weyse, whose comic operas are greatly admired. Hartmann and Gade are living composers of great merit.

DAN'TES, a secret order among the Mormons suspected of having committed many murders, of which unfortunately there can be little doubt.

DAN'NEBROG, an ancient battle standard of the Danes, alleged to have fallen from heaven at the battle of Volmar, 1219 A.D. Like the palladium, it was supposed to insure victory, but it was twice captured and twice retaken. The order of the Dannebrog ranks second in the Danish orders of knighthood.

DANNEMO RA, a parish and iron-mining region of Sweden, 23 m. n. of Upsal; pop. 1000. The iron is of excellent quality, and is largely used in making steel.

DANNEVIRKE, a wall of defense against the Franks, built by the Danes in 808 A.D., reaching from the North sea to the Baltic. During the troubles of 1848, the line of the old wall was strongly fortified, but the works were destroyed in 1864.

DAN RIVER, rising in the Blue Ridge in Virginia, passing through a considerable portion of that state into North Carolina, several times crossing the state boundaries, and finally uniting with the Staunton river in Virginia to form the Roanoke. It has a length of about 200 m., and is in some parts navigable.

DANSVILLE, a village in Livingston co., N. Y., on the Erie railroad, at the terminus of the Genesee valley canal, 38 m. s. of Rochester; pop. '75, 4,061 (township). Among the institutions are the Dansville Methodist seminary, founded 1858, and a hygienic home, established about 1860. The village is in a fertile district, and has considerable trade.

DANVERS, a t. in Essex co., Mass., 15 m. n.e. of Boston, with which it is connected by rail; pop. '70, 5,600. In 1852, George Peabody, who was a native of this town, gave a sum finally amounting to \$200,000 for the promotion of knowledge and morality among the inhabitants. This was the foundation of the Peabody institute and its fine library.

DANVILLE, a city and the seat of justice of Vermilion co., Ill., on Vermilion river, 16 m. above its junction with the Wabash; connected by railroads with all parts of the country; 125 m. s. of Chicago; pop. '70, 7,735. Coal-mining is the chief source of the city's importance.

DANVILLE, the co. seat of Boyle co., Ky., on a branch of Dick's river; connected by rail with Louisville and Nashville; 42 m. s. of Frankfort; pop. '70, 2,542—1210 colored. It is the seat of Centre (Presbyterian) college, founded 1819, and Danville theological seminary (Presbyterian), founded 1853.

DANVILLE, the seat of justice of Montour co., Penn., on a branch of the Susquehanna, 50 m. n.e. of Harrisburg; pop. '70, 8,436. There are rich deposits of anthracite, great quantities of which find the way to market through the Pennsylvania canal and various railroads. Iron manufacturing, however, is the principal business; of railway bars alone, 75,000 are made annually.

DANVILLE, a t. in Pittsylvania co., Va., on the river Dan, 120 m. w.s.w. of Richmond, reached by the Richmond, Danville, and Piedmont railroad; pop. about 7,000. After the abandonment of Richmond, April, 1865, Danville became for a few days the capital of what remained of the Southern confederacy.

DAPHNE, a nymph in Grecian mythology, of the woods some say, and some say of the water. She was pursued by Apollo, and prayed for help from her mother (the earth), whereupon the ground opened and she disappeared. From the place there grew a laurel, a tree sacred to Apollo, and to all poets and heroes.

DAPHNEPHORIA, a festival held once in nine years at Thebes in honor of Apollo. There was a procession in which the chief figure was a boy chosen for his beauty and strength, and having both parents living. Behind him moved a troop of maidens carrying green boughs and singing hymns to the god. The boy dedicated a bronze tripod in the temple of Apollo.

DAPHNIS, in mythology, a Sicilian youth of rare beauty, the son of Mercury and a nymph. He became a herdsman on Mt. Etna, where he won the love of a maid, who, for his supposed unfaithfulness, punished him with blindness. Thereupon his father carried him away to heaven. To Daphnis is ascribed the invention of bucolic poetry.

DA PONTE, LORENZO, 1749—1838; an Italian poet, for many years a resident of New York, where he died. Exiled from Venice for writing a satirical poem, he went to Vienna, where he became one of the secretaries of Joseph II. There he wrote for the stage, among other works the librettos of *Don Giovanni* and *Le Nozze di Figaro*. After the emperor's death, he went to London, where he was secretary and poet of the Italian opera. In 1805, he emigrated to New York, where he taught Italian, and in 1828, was chosen professor of that language in Columbia college. He wrote memoirs of his life, a number of dramas, and translated various English works into Italian.

D'ARBLAY, MADAME FRANCES (*ante*), 1752-1840; daughter of Charles Burney, an English professor of music. Frances taught herself to read and write. From her 15th year she lived in an exceptionally brilliant circle of literary men, musicians and actors. As her step-mother disapproved of her "scribbling," she burned all her manuscripts, among them a *History of Caroline Evelyn*, a story of which her first published novel *Evelina* was the sequel. About the same time (not much beyond her 15th year), she began her famous diary, which extended over a varied and interesting life of 72 years further. Her novel *Evelina, or a Young Lady's Entrance into the World*, was planned when she was about 16, written some years later, but not published until she was 26; and then by stealth. She disposed of it through her brother to Dr. Lowndes for \$100, and did not herself know of its appearance until she saw an advertisement of it in the newspapers, after it had been everywhere commented upon with unqualified praise. The proud father, who had been in the secret, told it to Mrs. Thrale, and the authoress was at once admitted to the literary coterie of which Dr. Johnson was the center. The great lexicographer entertained a friendship for her which caused Boswell a jealousy as keen as it was absurd. Her *Cecilia, or the Memoirs of an Heiress*, was even more successful. In 1786, she obtained the position of second keeper of robes to queen Charlotte, wife of George III., and for five years her chief business was to assist the queen to dress, and look after her lap-dog and snuff-box, perhaps now and then to read to her. After five years she resigned, and in 1793, married M. d'Arblay, a French artillery officer. The next year her only child (who became the Rev. A. d'Arblay) was born. From 1802 to 1812, she was with her husband in France, and in 1814, published *The Wanderer, or Female Difficulties*. Her husband died in 1818. She was not remarkable for personal beauty; was small, retiring, rather prudish, delighting to be lionized, while she dreaded nothing so much as to be thought unfeminine or eccentric. Her novels are now not much read, but her *Journal and Letters*, full of egotism, are known everywhere. Her mania was to succeed as a dramatic writer, and Mrs. Siddons and Kemble appeared in one of her tragedies at Drury Lane in 1795, but the piece was a complete failure.

DARBOY, GEORGES, 1813-71; a French Roman Catholic ecclesiastic, ordained a priest in 1833. In 1855, he became titular vicar-general of Paris. In 1859, he was appointed bishop of Nancy, and in 1863, advanced to archbishop of Paris, where he was in high favor with the court, being appointed grand officer to the legion of honor. He was a strenuous upholder of episcopal independence. At the Vatican council he maintained the rights of the bishops, and strongly opposed the doctrine of papal infallibility; but when it had been declared, he was one of the first to submit. During the war with Germany he was indefatigable in works for sick and wounded soldiers. He refused to leave his post during the siege, or to seek safety in flight during the brief triumph of the commune. On April 14, 1871, he was arrested by the communists as a hostage, and May 27, he was murdered in prison, dying in the attitude of blessing, and uttering words of forgiveness. He was the author of a number of works, among which are a life of Thomas à Becket, and a translation of the *Imitation of Christ*.

DARBYITES. See PLYMOUTH BRETHERN, *ante*.

DARCET, JEAN PIERRE JOSEPH, 1727-1801; a French chemist who wasted a fortune in the pursuit of his favorite science, sometimes suffering extreme privations. He was tutor to Montesquieu's sons, and assisted the father in his mental labors, particularly in preparing *The Spirit of the Laws*, and in his last moments defended him against the attacks of the Jesuits. In chemistry, Darcet made many valuable discoveries. In 1774, he was appointed professor of chemistry in the college of France, and in 1784, he became a member of the academy of sciences, and director of the porcelain manufactory at Sevres. When the revolution began, he went with Robespierre and Danton.

DARDANUS, in Greek mythology, the ancestor of the Trojans. It is said that he crossed over from Samothrace to the Troad by swimming on an inflated skin, and founded the kingdom of Dardania before the existence of Troy. He is called a son of Zeus and the pleiad Electra; and the *Iliad* represents that Zeus loved him more than his other sons.

DARDEN, MILES, 1798-1857; b. N. C., and supposed to be one of the largest of men. He was 7½ ft. high, and at the time of his death weighed over 1000 lbs. His coffin was 8 ft. long, within an in. of 3 ft. deep, and 2 ft. 8 in. wide.

DARE, a co. in n.e. North Carolina, on Albemarle sound, including a number of islands along the coast; 350 sq. m.; pop. '70, 2,778-377 colored. It is covered to a large extent with red cedar and cypress swamps. Co. seat, Manteo.

DARE, VIRGINIA, the first child b. in America of English parents, at Roanoke, Va. (now N.C.), Aug., 1587. She was the grand-daughter of John White, who was sent out by sir Walter Raleigh as governor of the colony, which had an unknown fate.

DARES, a Trojan priest of Hephæstus (Vulcan) in the time of the Trojan war, to whom an account of the war has been attributed, though there is no doubt that the work was written at a much later period.

DARIC, a gold coin of ancient Persia, used in Greece as well as Asia. It was much like the Greek stater. On the obverse is the figure of an archer kneeling, and on the reverse a royal palla. It was named from Darius Hytaspis. Its value for its times cannot now be definitely fixed; but in American gold it is not far from 7 dollars.

DARK AGES, the period, not well defined, which elapsed between the fall of the Roman empire and the revival of letters in the 13th century. See MIDDLE AGES, *ante*.

DARK DAY, in New England, May 19, 1780. The darkness commenced between 10 and 11 A.M., and continued until the middle of the next night. The wind was from the s.w. and the darkness appeared to come with the clouds drifting from that point. It covered the country from New Jersey to Maine, and appears to have been greatest in Massachusetts and the adjoining portion of New Hampshire; yet it was intense in Connecticut and Rhode Island. It was much less in New York, and in New Jersey it was not particularly noticed. Where it most prevailed it was impossible to read ordinary print, or read the time by a watch or clock, or do ordinary business without artificial light. An intelligent observer says: "Candles were lighted in the houses; the birds, having sung their evening songs, disappeared and became silent; the fowls retired to roost; the cocks were crowing all around as at break of day; objects could not be distinguished but at a very little distance; and everything bore the appearance and gloom of night." Two other less conspicuous dark days had been noticed in the country, Oct. 21, 1716, and Oct. 19, 1762.

DARKE, a co. in w. Ohio, bordering on Indiana, intersected by a number of railroads; 609 sq.m.; pop. '70, 32,278. The surface is generally level and the soil fertile, producing cereals, hay, butter, wool, tobacco, etc. Co. seat, Greenville.

DARKE, WILLIAM, 1736-1801; b. Philadelphia; served through the revolutionary war, rising to colonel. He was killed in battle with the Miami Indians.

DARLASTON, a t. and parish in Staffordshire, England, 4 m. s.e. of Wolverhampton; pop. of parish in '71, 12,841. It has extensive mines of iron and coal and manufactures of hardware.

DARLEY, FELIX O. C., b. Philadelphia, 1822; an artist whose drawings for engravers have given him lasting fame. His illustrations appear in the works of Irving, Cooper, Longfellow, and others. Among some of the best known are illustrations of the *Legend of Sleepy Hollow*, and *Rip Van Winkle*. In 1868, he published, after a visit to Europe, *Sketches Abroad with Pen and Pencil*. He has executed four large pictures for prince Napoleon.

DARLINGTON, a co. in n.e. South Carolina, on the Great Pedee river, intersected by three railroads; 800 sq.m.; pop. '70, 26,243—16,146 colored. It is well watered and fertile, producing cotton, rice, corn, etc. Co. seat, Darlington Court House.

DARLINGTON, WILLIAM, LL.D., 1782-1863; b. Penn.; a botanist. In 1806, he went to Calcutta, and on returning published an account of his voyage. In the war with England, he served with distinction. In 1815, he was chosen to congress and re-elected in 1819. At Westchester, Pa., he founded an athenæum, an academy, and a society of natural history. Among his publications are *Mutual Influence of Habits and Disease*; *Agricultural Chemistry*; *Agricultural Botany*; and *Memorial of John Bartram*.

DARLINGTONIA, a perennial plant of California of the order sarraceniacæ. Its leaves are very large, sometimes 2 ft. long, and are hollow and twisted, the upper part being shaped like a hood, under which is the opening into the pitcher of the leaf. The flower stalk is frequently 4 ft. high, the flower single, and about 2 in. across.

DARTMOUTH COLLEGE, at Hanover, N. H., had its origin in Moor's charity school, an institution for the education of Indian children, organized at Lebanon, Conn., in 1754, by Eleazar Wheelock, D.D. Dartmouth college received its charter in 1769 from George III., at the hands of John Wentworth, royal governor of New Hampshire. Dr. Wheelock became the first president, and the name given it was in honor of lord Dartmouth, one of its chief benefactors. Hanover, on the Connecticut river, on the western border of New Hampshire, was selected as a suitable location for the college, and grants of about 44,000 acres of land were made. An independent charter was obtained soon afterward for Moor's school, which was continued as a separate department until 1849. When Dr. Wheelock removed his school in 1770 from Lebanon to Hanover, the students consisted of 18 whites and 6 Indians, and the first class of four students graduated in 1771. Dr. Wheelock died in 1779, and was succeeded by his son John Wheelock, who after a presidency extending over 36 years, was removed from his office by the trustees in 1815. A religious controversy had caused a disagreement which led to a conflict with the legislature of the state. The legislature favored Dr. Wheelock, and passed an act to amend the charter, to change the title to "Dartmouth university," and to increase the number of trustees from twelve to twenty-one, a majority of whom should constitute a quorum. A second act, passed Dec. 18, 1816, gave the governor and council power to fill all vacancies that might happen in the board of trustees previous to the next meeting. The cause of the college was argued in the state court by Daniel Web-

ster, Jeremiah Smith, and Jeremiah Mason, who were opposed, in behalf of the state, by Ichabod Bartlett and George Sullivan. At the Nov. term of the court, 1817, chief justice William M. Richardson rendered a decision which was adverse to the college. The case was at once carried to the supreme court of the United States, and was argued at Washington in that powerful speech which first gave Mr. Webster his national fame. Opposed to him were John Holmes, of Maine, and the attorney-general, William Wirt. In Feb., 1819, chief-justice Marshall gave a decision in favor of the college. The "university" organization was dissolved, and the old college board of trustees sustained. The question in this conflict was of vital importance not only to Dartmouth college, but to many other institutions, and the decision secured the sacredness of private trusts. Dr. Wheelock, who had been elected president by the new board of the university in Feb., 1817, died within two months, and was succeeded by William Allen, D.D., who held the office until the decision of chief-justice Marshall in 1819. Francis Brown, D.D., who had been elected president of the college by the old board in 1815, held the office until his death in 1820. His successors were: Daniel Dana, D.D., 1821; Bennet Tyler, D.D., 1821-28; Nathan Lord, D.D., 1828-63; Asa Dodge Smith, D.D., LL.D., 1863-76; and Samuel C. Bartlett, D.D., LL.D., who entered upon his duties, 1877.

The college comprises five departments, the academical, medical, scientific, agricultural, and engineering, so associated that each shares in some measure the advantages of the others. The buildings of the college are: Dartmouth hall, the oldest, of wood, 150 by 50 ft., and three stories high, contains the chapel, recitation rooms, and rooms for students; Wentworth and Thornton halls, dormitories, built in 1830, of brick, 70 by 50 ft.; Reed hall, built of brick in 1840, 100 by 50 ft., containing the libraries, the reading room, the rooms of the physical department, and the collection of pictures belonging to the college; Bissell hall, the gymnasium, built in 1867, of brick, 90 by 47 ft.; the building of the scientific department, entirely rebuilt in 1870, 56 by 36 ft.; Culver hall, built in 1870, a handsome structure, 100 by 60 ft., four stories high, containing laboratories, lecture-rooms, and rooms for the various cabinets and museums; the medical building, 72 by 32 ft., built in 1812; the observatory, 60 by 18 ft., in 1853; and Conant hall, erected in 1874. Except Conant and Bissell halls, the buildings of the college are situated in the college park, a tract of about 40 acres, in the eastern part of the village; the chief eminence commands a view of great beauty, and the grounds are shaded with large and beautiful elms. The academic year begins about the 1st of Sept., and commencement is on the last Thursday of June; the year is divided into two terms of 20 weeks each. The regular course occupies four years; with very few exceptions all its studies are required, to entitle the student, upon the completion of the course, to the degree of bachelor of arts. The degree of master of arts is conferred, in course, on any bachelor of three or more years' standing.

The Chandler scientific department was established in 1851, by a resolution of the trustees, in acceptance of a sum bequeathed to them in trust by Abiel Chandler, esq., late of Walpole and formerly of Boston, Mass., "for the establishment and support of a permanent department or school of instruction in the college, in the practical and useful arts of life, comprised chiefly in the branches of mechanics and civil engineering, the invention and manufacture of machinery, carpentry, masonry, architecture and drawing, the investigation of the properties and uses of the materials employed in the arts, the modern languages and English literature, together with book-keeping and such other branches of knowledge as may best qualify young persons for the duties and employments of active life." Students who complete the regular course of four years receive the degree of bachelor of science. The degree of master of science is conferred in course, on bachelors of three years' standing.

At the session of the legislature of New Hampshire in 1866, an act was passed establishing the "New Hampshire college of agriculture and the mechanic arts," on the basis of the congressional land grant, and authorizing its location at Hanover and its connection with Dartmouth college. The course of study includes the English portion of a regular college course, together with such studies as meet the necessities of the intelligent farmer. Students who complete the course and prepare theses on subjects relating to agriculture or the mechanic arts receive the degree of bachelor of agricultural science. A state museum of general and applied science has been established, and receives the specimens accruing from the state geological survey. A valuable tract of land of 360 acres in the immediate vicinity of Culver hall is used for the purposes of agricultural experiment, and furnishes opportunity to the students for remunerative labor.

The medical department was founded in 1797; there are two terms of 14 weeks each, beginning in Dec. and in Mar.; students, 21 years of age, who have devoted three years to the study of medicine, and during that time have attended two courses of medical lectures, including one at Dartmouth, receive the degree of doctor of medicine. A museum of pathological anatomy has been recently added to this department.

The Thayer school of civil engineering aims to provide an exclusively professional training for young men who may desire instruction of an advanced character. The course is essentially "post-graduate," limited in range, and fundamental in its scope.

The general faculty comprises, besides the president, 25 professors, 5 other instructors, and a librarian. In 1879-80, the number of students was 396, including 228 in the academical, 49 in the scientific, 31 in the agricultural, 84 in the medical, and 4 in the

civil-engineering department. The number of alumni is 4,400, of whom 2,000 are living. The number of volumes in the several libraries is as follows:

United libraries (exclusive of pamphlets)	50,291
Christian fraternity's library	300
Astronomical library	1,100
Medical school library	1,600
Thayer school library	2,000
Agricultural school library	1,435

Total..... 56,726

D'ARUSMONT, FRANCES (maiden name, FANNY WRIGHT), 1795-1852; a native of Dundee, Scotland. From her friend Adam Smith and other learned men, she imbibed advanced ideas of social reform, and when still young published a defense of the doctrines of Epicurus. From 1818 to 1821, she resided in the United States, and, after a visit to France, returned in 1825 and secured land on the Mississippi (near the present Memphis, Tenn.), to make an experiment of the elevation of colored people. It was a failure, and after several years of useless expense her people were set free and sent to Liberia. In later years she lectured in various places, advancing views which led to much persecution. In 1838, in France, she married M. d'Arusmont, but the union was not happy. She afterwards returned to the United States and settled in Cincinnati, where she died. Her chief publications are *Views on Society and Manners in America; Altorf*, a tragedy; and *Lectures on Free Inquiry*.

DARWEN, a t. in Lancashire, Eng., 16 m. n.w. of Manchester; pop. '71, 26,553. The main industries are in the manufacture of cotton goods, carpets, paper, rope, twine, machinery, and brass. There are three fairs held every year.

DARWINISM, a term often too widely applied, and made to cover every subject relating to the origin and development of species. Of the writers, mainly in England, who have gathered the vast array of facts taken as a basis for the doctrine of evolution (see SPECIES), Charles Darwin (see DARWIN, CHARLES, *ante*) deserves especial notice. Though modestly confining himself to the problem of accounting for the evolution of the higher organic forms out of the lower, Darwin has done much to further the idea of a gradual evolution of the physical world. The philosophic significance of the hypothesis of natural selection, especially associated with Mr. Darwin, is due, as prof. Helmholtz points out, to the fact that it introduces a strictly mechanical conception in order to account for those intricate arrangements known as organic adaptation, which had before been conceived only in a teleological manner. By viewing adaptations as conditions of self-preservation, Darwin explains the abundant appearance of purpose in organic nature. By his resolute endeavor in this direction, he has done much to eliminate the teleological method from biology, while it is true, that, in his conception of seemingly spontaneous variations and of correlations of growth, he leaves room for the old manner of viewing the organic development as controlled by some internal organizing principle. Again, Darwin has greatly extended the scope of mechanical interpretation by making intelligible, apart from the co-operation of intelligent purpose, a genesis of the organic world as a harmonious system of distinct groups, a unity in variety, having certain well-marked typical affinities. Darwin in his doctrine of the organic world as a survival refers this appearance of systematic plan to perfectly natural causes, thus giving new meaning to the ancient theory that the harmony of the world arises out of discord. Once more, his hypothesis is of wide philosophic interest, since it supports the idea of a perfect gradation in the progress of things. The variations which he postulates are slight, if not infinitesimal, and effect a sensible functional or morphological change only after they have been frequently repeated and accumulated by heredity. Darwin's later work, in which he applies his theory of the origin of species to man, is a valuable contribution to a naturalistic conception of human development. The mind of man in its lowest stages of development is here brought into close juxtaposition to the animal mind, and the upward progress of man is viewed as effected by natural causes, chief among which is the action of natural selection. He does not inquire into the exact way in which the mental and bodily are connected. He simply assumes that, just as the bodily organism is capable of varying in an indefinite number of ways, so may the mental faculties vary indefinitely in correspondence with certain physical changes. In this way he seeks to account for all the higher mental powers, as the use of language and reason, the sentiment of beauty, and conscience. Finally, Darwin seeks to give a practical and ethical turn to his doctrine, since he defines the general good—the proper object of man's action—as “the rearing of the greatest number of individuals in full health and vigor, and with all their faculties perfect under the conditions to which they are subject.” In his view of the future of the race, he leans to the idea that the natural process which has effected man's first progress must continue to be an important factor in evolution, and that, consequently, it is not well to check the scope of this process by either an undue restraint of population, or a charitable preservation of the incompetent. It is well to observe that if Darwinism confined itself to a strict following of the great investigator, it might involve less of philosophic and metaphysical theory than has become popularly associated with it, for much of

which Darwin is not to be held responsible, at least in the terms of his presentation. Facts and the co-ordination of facts in their physical ranges are his inestimable contribution to science. Beyond the physical relation, he does not mark out a path. It is evident that from his treasury of facts, widely divergent systems of evolution may be drawn, according as the evolution which he has presented as a fact is accounted for by referring its cause or its working force to one or another set of principles.

DASS, PETTER, 1647-1708; son of a Scottish merchant of Dundee, who, in 1630, left his native land to escape from the troubles in the Presbyterian church, settled in Bergen, Norway, and married a Norse girl. Thus, though of Scottish descent, Dass was born on an island on the coast of Norway, and was educated in Bergen university. In 1672, he was ordained a priest, and for many years fulfilled the duties of that office in the wild northern regions of that country, during which period he wrote innumerable reams of verses. These writings passed from hand to hand, but few of the poems were printed in his life-time. The most famous, *The Trumpet of Northland*, was not published until 1739. *The Norwegian Song of the Valley* appeared in 1696, and in 1711, came a volume entitled *Spiritual Pastime*. Even now the *Trumpet* is one of the most favorite national poems, and long ago won for its author the title of "father of Norwegian poetry." It is a rhymed description of the province of Northland, given in dancing verse of the most breathless kind, and full of humor, fancy, wit, and quaint learning.

DA'SYA, a genus of red algæ, about a dozen species of which are found in the United States. The genus includes some of the most beautiful sea-weeds.

DATARY, an assistant to the pope, sometimes called chancellor. To relieve the pope of unimportant business he has power to grant certain requests, in which he is assisted by a *pro* and a *sub* datary.

DAUB, KARL, 1765-1836; a German theologian, educated at Marburg, where he was tutor for a time. In 1794, he was professor of philosophy at Hanau, and soon afterwards of theology at Heidelberg, which office he held during life. His writings are of much importance, since they reflect the influence upon theology exercised by the several schools of philosophy prevailing during his time.

DAUBER, the name of mud-wasps (family *sphigidae*, genus *Pelopæus*), common in the United States. The female builds her nest of mud, in the form of a cone the size of a cigar. Here, in separate cells, she lays her eggs, and with each egg imprisons a spider alive, but paralyzed by her sting. When the eggs hatch, the grub feeds on the spider, passes the pupa state, gnaws through the mud of the nest and comes out a perfect wasp.

DAULIS, an ancient city in Phocis, destroyed by the Persians under Xerxes; after being rebuilt, was again destroyed by Philip of Macedon; it was rebuilt for the third time, and considered from its position on a high hill almost impregnable. Its ruins are now visible near the village of Davlia.

DAUNOU, PIERRE CLAUDE FRANÇOIS, 1761-1840; a French politician. In the convention of 1792, he denied the right of that body to try the king, and voted only for his detention. He was the first president of the council of five hundred. In 1798, he was conspicuous in organizing the Roman republic. His later years were devoted to literature, and in 1807, he became keeper of the archives of France. In 1819, he was professor of history and morals in the college of France, and in 1839, he became a peer.

DAUPHIN, a co. in s.e. Pennsylvania, bounded w. and s.w. by the Susquehanna, intersected by a number of railroads and two canals; 530 sq.m.; pop. '70, 60,740. The Blue mountain crosses it near the center. The valleys are fertile. Coal and iron are abundant. The chief productions are agricultural, though there are many manufactories. Co. seat, Harrisburg, the capital of the state.

DAVENPORT (*ante*), a city in Iowa, on the Mississippi, below the upper rapids, opposite Rock Island, Ill., 335 m. n. of St. Louis, and 183 m. w. of Chicago; pop. '75, 21,234. It is reached by the Davenport and St. Paul, and the Chicago, Rock Island, and Pacific railroads, while railroads coming to the e. bank of the Mississippi give easy communication with the Atlantic cities. The city is on the top and slope of a steep bluff, and commands an extensive view of Rock Island and the river. On the island are the U. S. arsenal and military headquarters, and many fine buildings put up by the general government. From D. to the island there is a wrought-iron bridge for railway and carriages, which cost \$1,000,000. The city has a city hall, court-house, opera-house, nearly 30 churches, 4 banks, the academy of the Immaculate Conception and the seminary of St. Charles Borromeo (both Roman Catholic), Griswold college (Prot. Ep.), a Roman Catholic hospital, and a number of excellent schools. The water and gas works of the city are very superior. The manufactures are chiefly of carriages, farming tools, furniture, lumber, flour, and woolen goods. There is a large local trade from the fine agricultural region in which the city is situated.

DAVENPORT, EDWARD L. b. Mass., 1816; d. Penn., 1877; an American actor. He made his first appearance in Providence, R. I., playing a minor part in *Sir Giles Over-*

reach, with the elder Booth as "Sir Giles." Davenport made rapid progress, and was soon recognized as a leading artist in tragedy, comedy, and melodrama. He supported Anna Cora Mowatt Ritchie in a wide range of characters both in this country and in England, and played with Macready and other stars. While in England he married Mrs. Vining, herself an actress, of a family of actors. Returning about 1860, he traveled over the United States, playing in the principal cities, chiefly in Shakespearean characters and those drawn from Dickens's novels. Among his latest conspicuous representations were such widely divergent characters as "Brutus" in *Julius Cæsar* and "Bill Sykes" in *Oliver Twist*. His daughter Fanny is an actress of established fame, and her sister Blanche is a vocalist of excellent standing. Davenport was highly esteemed for his genial and open-hearted manners.

DAVENPORT, JOHN, 1597-1670; one of the most zealous and eminent of the Puritan divines who came to New England. Graduated at Oxford, and was a minister in the church of England; but his Puritanic opinions led him to quit that church in 1625. Two years afterwards he came to Boston, and in 1638 was one of the founders of the New Haven colony. Goffe and Whalley, the regicides, were protected by him. In 1668, he became minister of the First church in Boston, and died in that charge. He was a minister in New Haven for 30 years, and was active in the civil government.

DAVIDISTS, the name of two distinct sects in the Christian church. 1. Followers of David of Dinant, whose work was condemned by the synod of Paris in 1209. His fundamental idea was that the Deity alone had any real existence, being the *materia prima* of all things. 2. DAVIDISTS, or DAVID GEORGIANS, followers of David George, or Joris, a native of Delft, Holland. In 1530, he was whipped, had his tongue bored, and was imprisoned for obstructing a Roman Catholic procession. He founded a sect of his own, and in 1542, published his *Book of Wonders*, detailing the visions which he professed to have received. After his death, his body was dug up and burned by order of the senate of Basel, where he had passed the latter part of his life as a merchant under an assumed name. The sect, under the leadership of Henry Nicholas, became known in Holland and England as the "Familists. They interpreted the whole of Scripture allegorically, and maintained that as Moses had taught hope and Christ had taught faith, it was their mission to teach love, the service of which was the highest and best of the dispensations. The result was an extreme Antinomianism in practice, which attracted the notice of the authorities in both countries. Early in the 17th c., the sect was suppressed or absorbed by others.

DAVID'S ISLAND, in Long Island sound, a few miles e. of New York, occupied by the federal government for military purposes. Its extent is about 100 acres.

DAVIDSON, a co. in s.e. Dakota, intersected by the Dakota river; 432 sq. miles. Not included in the census of 1870.

DAVIDSON, a co. in w. North Carolina, on the Yadkin river, crossed by the North Carolina railroad; 620 sq.m.; pop. '70, 17,414—3,546 colored. Gold and silver have been found, but the chief productions are agricultural. Co. seat, Lexington.

DAVIDSON, a co. in n. Tennessee, intersected by the Cumberland river, and crossed by four railroads; 750 sq m.; pop. '70, 62,897—25,412 colored. It is a fertile agricultural region. Co. seat, Nashville, the capital of the state.

DAVIDSON, LUCRETIA MARIA, 1808-25; b. N. Y.; remarkable for precocity in rhyming. The first of her writings preserved were done when she was nine years old. At 16 she attended school in Troy, but health failed and she died the next year. Many of her pieces were lost or destroyed, but nearly 300 were published in a volume.

DAVIDSON, MARGARET MILLER, 1823-38; sister of Lucretia Maria, and like her a precocious verse writer. At the age of 10 she composed and acted in a drama of New York society. Washington Irving was her literary patron, and under his supervision the works of both sisters were published in 1850.

DAVIDSON, WILLIAM, b. Penn., 1746, of Irish extraction; removed to North Carolina, 1750; educated in the liberty-loving Mecklenburg co.; a major in one of the first regiments raised in North Carolina for the revolutionary war. He was in the engagements at Monmouth, Brandywine, and Germantown, and advanced to the rank of lieut.col. He was killed in a skirmish with the British troops under Tarleton near the Catawba river, but had previously been promoted to the rank of gen. Davidson college (N. C.) is named after him.

DAVIE, a co. in w. North Carolina, on the Yadkin river; 250 sq.m.; pop. '70, 9,620—3,093 colored. The productions are wheat, corn, oats, tobacco, etc. Co. seat, Mocksville.

DAVIES, CHARLES, LL.D., b. Conn., 1798. He graduated from the West Point military academy in 1815, and the next year became a teacher there. He rose rapidly to become professor of mathematics, and began to prepare text-books. In 1845, he took the chair of mathematics and natural philosophy in the university of New York. His mathematical works are widely known and used. They make a sequence from primary

arithmetic to the higher mathematics, and include Bourdon's *Algebra* and Legendre's *Geometry*. Of his own works the more important are those on *Surveying and Trigonometry*, the *Logic of Mathematics*, and *Dictionary and Cyclopædia of Mathematical Science*.

DAVIES, HENRY E., jr., b. N. Y., 1836, educated at Harvard, Williams, and Columbia colleges, and admitted to the bar in 1857. He was an early volunteer in the service of the union when the war of the rebellion broke out, and rose to be maj.gen. of volunteers.

DAVIES, SAMUEL, D.D., 1724-61; b. Del.; licensed to preach, 1746. In 1753, he was sent to England to solicit funds for the college of New Jersey, and was successful. On return, he resumed his pastoral work, and after the defeat of Braddock in the Indian war, he published a sermon on the disaster, in a note to which he wrote: "That heroic youth col. Washington, whom I cannot but hope Providence has hitherto preserved for some important service to his country." In 1759, he succeeded Jonathan Edwards as president of the college of New Jersey.

DAVIES, THOMAS A., b. N. Y., 1809; graduate of West Point. In the war of the rebellion he served on the union side, and at its close held the rank of brevet maj.gen. of volunteers.

DAVIESS, a co. in s.w. Indiana, between the branches of the White river, traversed by the Wabash and Erie canal and the Ohio and Mississippi railroad; 423 sq.m.; pop. '70, 16,747. The surface is rolling or level, and limestone and coal are found. Agriculture is the principal business. Co. seat, Washington.

DAVIESS, a co. in n.w. Kentucky on the Ohio river; 400 sq.m.; pop. '70, 20,714—3,603 colored. The surface is level and the soil good. Productions agricultural. Co. seat, Owenborough.

DAVIESS, a co. in n.w. Missouri on Grand river; 576 sq.m.; pop. '70, 14,410—324 colored. Surface uneven and soil fertile; productions agricultural. Co. seat, Gallatin.

DAVIESS, JOSEPH HAMILTON, 1774-1811; b. Va., but taken at an early age to Kentucky, widely known and remembered there as "Jo Daviess." His eccentricities gave him much notoriety. On one occasion he appeared as an advocate before the supreme court in the most dilapidated attire, won an important case, and disappeared in the same garb. He married a sister of chief-justice Marshall, and became U. S. attorney for the state. He was killed at the battle of Tippecanoe while leading a cavalry charge against the Indians.

DAVIS, a co. in s.e. Iowa, bordering on Missouri, intersected by Fox river and two railroads; 480 sq.m.; pop. '75, 15,757. Productions agricultural. Co. seat, Bloomfield.

DAVIS, a co. in n.w. Kansas, intersected by the Kansas river and three railroads; 386 sq.m.; pop. '78, 5,382. Agriculture is the chief business. Co. seat, Junction City.

DAVIS, a co. in n. Utah, lying along Great Salt lake, in part occupied by the Wahsatch mountains; 320 sq.m.; pop. '70, 4,459. It is crossed by the Union Pacific and Utah Central railroads. Productions chiefly agricultural. Co. seat, Yarmington.

DAVIS, ANDREW JACKSON, b. N. Y., 1826. He has long been prominent as a leader in modern spiritualism, and at the age of 19 published *The Principles of Nature, her Divine Revelations*, which he claims were dictated to him by spiritual influence. He has also published *The Great Harmonica*; *The Magic Staff*; and many papers of less consequence.

DAVIS, CHARLES HENRY, LL.D., b. Boston, 1807; entered the navy in 1823, and rose to rear-admiral in 1863. In 1859, he was made superintendent of the *American Nautical Almanac*. He was one of the board of officers assembled in 1861 to consider measures for an attack along the coast of the states then beginning the rebellion, which consultation resulted in the expedition against Port Royal. In May, 1862, he had command on the flotilla off fort Pillow, on the Mississippi river, and on the 10th of that month resisted a fleet of 8 rebel iron-clads which came against him, disabling three of the rebel gun-boats. The confederates abandoned fort Pillow. Early in June, on the 8th of that month, Davis came up with their iron-clads opposite Memphis. He attacked them at once, captured or destroyed all but one, and the surrender of the city of Memphis immediately followed. For this and other services Davis was made rear-admiral. Subsequently he was chief of the bureau of navigation, and immediately after the war he was made superintendent of the national observatory. In 1867, he commanded the Brazil squadron, and in 1870 took command of the Norfolk navy yard.

DAVIS, DAVID, LL.D., b. Md., 1815; graduated from Kenyon college, and settled in law practice in Illinois, where he was successively chosen to the legislature, to the constitutional convention, and as district judge. In 1862, he was appointed one of the jus-

tices of the U. S. supreme court. He resigned in 1877, after 15 years' service, and was chosen U. S. senator from Illinois. His political affiliations, which have been in question, are undoubtedly democratic.

DAVIS, EDWIN HAMILTON, b. Ohio, 1811; a physician and archæologist; graduate of Kenyon college, 1833. Occupied the chair of materia medica and therapeutics in New York medical college. Among other works, he has published *Monuments of the Mississippi Valley*.

DAVIS, EMERSON, D.D., 1798-1866; b. Mass.; a graduate of and for a time tutor in Williams college. In 1836, he became pastor of the First church (Congregational) in Westfield, where he remained until his death. Among his works are *The Teacher Taught*; *History of Westfield*; *The Half Century*; and essays and sermons.

DAVIS, HENRY, D.D., 1770-1852; a native of Long island, graduate at Yale, and tutor in Yale and Williams colleges, and held the Greek professorship at Union college. In 1809, he was elected president of Middlebury college, and in 1817, of Hamilton college, resigning in 1833 on account of difficulties with the trustees.

DAVIS, HENRY WINTER, LL.D., 1817-65; b. Md., graduate of Kenyon college, studying law at the university of Virginia. In 1850, he settled in Baltimore, and in 1855 was elected to congress, and was twice re-elected. He was a vigorous opponent of secession, and in 1863 was once more sent to congress. His work, *The War of Ormuzd and Ahri-man in the Nineteenth Century*, appeared in 1852.

DAVIS, JEFFERSON C., b. Ind., 1828. He was a volunteer in the Mexican war, and subsequently became a lieutenant in the regular army. He was stationed at fort Sumter during the bombardment in 1861. He served on the union side through the war of the rebellion, receiving the brevet rank of major-general. In 1873, he commanded the forces sent to subdue the Modocs after the murder of gen. Canby.

DAVIS, JOHN, an English navigator of the 16th century. He made three voyages in search of the northwest passage, but went no further than Baffin's bay. In 1591, he joined Cavendish in his second voyage to the South sea; and after the most of the expedition had returned unsuccessful, he remained and discovered the Falkland islands. In 1598, he took a merchant fleet from Holland to the East Indies. He made another voyage in 1605, and on his way home was killed by pirates.

DAVIS, JOHN, LL.D., 1761-1847; b. Mass.; graduate of Harvard in 1781, and began law practice in Plymouth. He was several times chosen to the legislature. In 1795, he was made comptroller of the U. S. treasury, and was the next year appointed district-attorney for Massachusetts. In 1801, he was appointed judge of the district court, holding the place more than 40 years. He was eminent as an antiquary, and was president of the state historical society.

DAVIS, JOHN CHANDLER BANCROFT, b. Mass., 1822; a lawyer, educated at Harvard. In 1849, he was secretary of legation in London, returning in 1852. In 1869-71, he was assistant secretary of state, and agent of the government at the Geneva arbitration.

DAVIS, MATTHEW L., 1766-1850; b. New York; for many years a newspaper correspondent in Washington. He was strongly attached to the fortunes of Aaron Burr, and wrote a memoir of him, besides editing his private journal. He was among the first to make letters from the national capital an especial newspaper feature. "The Old Boy in Specs" was his favorite signature.

DAVIS, NOAH, b. N. H., 1818. He became a lawyer in western New York; justice of the supreme court; member of congress; and in 1873 was elected a judge of the supreme court.

DAVORS, Jo (probably a fictitious name), author of a rare work called *The Secret of Angling*, quoted by Walton.

DAVOS, a valley in the Canton Grison, Switzerland, among the Rhætian Alps, about 20 m. long; pop. 70, 1726. It is famous as a resort for persons affected with diseases of the chest.

DAVOUD PASHA, b. 1816; a Roman Catholic Armenian, minister of the Turkish empire. He was professor in the military college in Constantinople; became secretary of the embassy at Berlin; superintended the construction of telegraphs; and, in 1861, at the time of the trouble between the Druses and Maronites, was made governor of Lebanon. Resigning in 1868, he was appointed minister of public works.

DAW. See JACKDAW, *ante*.

DAWES, HENRY LAURENS, b. Mass., 1816; graduated at Yale, and became an editor. He resides in Pittsfield. He has been in both houses of the state legislature, district attorney, and member of congress. In the house of representatives he was chairman of the committee on appropriations and the committee of ways and means. He was made senator.

DAWSON, BOGUMIL, 1818-72; a native of Poland, of Jewish parentage, who, through his own talents and exertions, gained such eminence on the stage as to be deemed by many the greatest actor of his time. In 1866, he came to America, where he had great success through two years. Soon after his return he became insane, and never recovered.

DAWSON, a co. in n. Georgia, drained by the Etowah; 200 sq.m.; pop. '70, 4,369—337 colored. It is hilly and fertile, producing corn and cotton. Co. seat, Dawsonville.

DAWSON, a co. in n.e. Montana, bordering on Dakota and British America, intersected by the Missouri; about 50,000 sq.m.; pop. '70, 177.

DAWSON, a co. in central Nebraska, on the Platte river, intersected by the Union Pacific railroad; 1450 sq.m.; pop. '70, 2,133. It is sterile and little cultivated. Co. seat, Dawson.

DAWSON, JOHN WILLIAM, LL.D., b. 1820, in Pictou, Nova Scotia; a geologist; graduate of the university of Edinburgh. In 1841, he made explorations in Nova Scotia, and describes its geology in *Proceedings of the Geological Society of London*. In 1850, he was superintendent of education in Nova Scotia, and in 1855, became principal of McGill college at Montreal. Some of his works are *Handbook of the Geography and Natural History of Nova Scotia*; *Hints to the Farmers of Nova Scotia*; *Acadian Geology*; *Archæia, or Studies of the Cosmogony and Natural History of the Hebrew Scriptures*; *the Story of the Earth and Man*, a treatise on geology. He has also written many geological articles in the *Proceedings of the Geological Society of London*, *The Canadian Naturalist*, and other journals.

DAY, GEORGE EDWARD, D.D., b. Mass. 1815; graduate of Yale, and the Yale theological seminary, where he was assistant instructor in sacred literature. Afterwards he was in the ministry; from 1851 to 1866, occupied the chair of biblical literature in Lane theological seminary, and afterwards that of the Hebrew language and biblical theology in the divinity school of Yale college. He has published a number of translated and original works.

DAY, JEREMIAH, D.D., LL.D., 1773-1867; b. Conn.; graduate of Yale; professor of mathematics and natural philosophy; and president of the college from 1822 to 1846. He published *An Introduction to Algebra*; *Navigation and Surveying*; etc.

DAY, or DAYE, STEPHEN, 1611-68; b. England; the first printer in the New England colonies. He came over in 1638, and began printing at Cambridge the next year, producing first *The Freeman's Oath*, but what freemen were meant does not appear. Then came an almanac, and afterwards the Psalms in the rude meter of the age. He printed also a catechism, *The Body of Liberties*, and many of the laws enacted.

DAY OR DAYS. DARK DAY in New England; see DARK DAY.—DECORATION DAY, the 30th of May, when in the cities and large towns of northern states there are processions to the various cemeteries, and the decorating of the graves of union soldiers with flowers. There is a similar custom in some of the southern states, usually somewhat earlier in the season.—ELECTION DAY, in nearly all the states of the union, comes on the Tuesday following the first Monday in Nov.—mostly a legal holiday.—EMANCIPATION DAY (in the British colonies), Aug. 1, 1834, when 770,280 slaves became free. The day is still celebrated by colored people in the West Indies and the United States.—EMANCIPATION DAY (in the United States), Jan. 1, 1863, when president Lincoln proclaimed freedom to nearly 4,000,000 of slaves.—EVACUATION DAY, Nov. 25 (local to New York). The British troops held the city during the revolutionary war, but on the conclusion of peace were withdrawn, Nov. 25, 1783. The annual celebration was long kept up with great spirit, but is now falling out of use.—GENERAL TRAINING DAY, once important as the annual turnout and drill of the rural militia, and kept as high holiday. It was usually in the latter part of the summer. In recent times the more complete organization of the militia has had the effect of doing away with general town and county muster.—HUNDRED DAYS, the period between Mar. 20, 1815, when Napoleon left Elba, and June 22 of the same year, when he was forced to abdicate, and was sent a prisoner to St. Helena.—LUCKY DAYS, certain recurring periods which people fancy are peculiarly fortunate for themselves; especially those which may be called "recurrent" days, as in the case of Thomas à Becket, who was born, baptized, fled to France, returned to England, was assassinated, and 700 years later had a church dedicated to him by cardinal Manning, each event occurring on Tuesday. Cromwell's peculiar day was the 13th of Sept., on which day in successive years he was born, won the battle of Worcester, and died. Harold, last of the Saxon kings, was born, lost his kingdom, and died on Oct. 14. Napoleon's day was the 2d of the month, on which date he was made consul, crowned, won at Austerlitz, and married Maria Theresa. The last Napoleon effected the *coup d'état* Dec. 2, was made emperor the same day, began the war on Germany Aug. 2, and surrendered his sword Sept. 2. Some of the greatest rulers of France of the house of Bourbon have been curiously connected with the 14th of the month, and also with 14 as a simple number. On May 14, 1026, the first king of France named Henry was consecrated, and on May 14, 1610, the last Henry was assassinated. Fourteen letters enter

into the name of Henri de Bourbon, who was the 14th king bearing the titles of France and Navarre. Dec. 14, 1553, that is, 14 centuries, 14 decades, and 14 years after the birth of Christ, Henry IV. was born; the ciphers of the date 1553, when added together, give the number 14. May 14, 1552, was the date of the birth of Marguerite de Valois, first wife of Henry IV. May 14, 1588, the Parisians revolted against Henry III., at the instigation of the duke of Guise. Mar. 14, 1590, Henry IV. gained the battle of Ivry. May 14, 1590, Henry was repulsed from the Faubourgs of Paris. Nov. 14, 1590, the Sixteen took an oath to die rather than serve Henry. Nov. 14, 1592, the parliament registered the papal bull giving power to the legate to nominate a king to the exclusion of Henry. Dec. 14, 1599, the duke of Savoy was reconciled to Henry IV. Sept. 14, 1606, the dauphin, afterwards Louis XIII., was baptized. May 14, 1610, the king was assassinated by Ravaillac. Henry IV. lived four times 14 years, 14 weeks, and four times 14 days. May 14, 1643, died Louis XIII., son of Henry IV.; not only on the same day of the same month as his father, but the date, 1643, when its ciphers are added together, gives the number 14, just as the ciphers of the date of the birth of his father gave 14. Louis XIV. mounted the throne in 1643; 1, 6, 4, 3 = 14. He died in the year 1715; 1, 7, 1, 5 = 14. He lived 77 years; 7 and 7 = 14.—**RED LETTER DAY** is so called from the practice of early printers of almanacs denoting holidays and fasts and festivals by red ink, all others being in black. **THANKSGIVING DAY**, at first a purely New England institution, within recent years has become national. It is supposed to have been in some degree a successor of the Hebrew feast of the tabernacles. Beginning almost with the beginning of the pilgrim colony, amid privations which seemed to offer small material for thankfulness, it rapidly spread over all New England, and has at last established itself in all the states, through the recommendation of governors and of the president in annual proclamations. By usage, the date appointed is the Thursday last in November.—**UNLUCKY DAYS** vary with different people. The most noted among nations speaking English is Friday, as the day on which the Saviour was crucified, to which day, by common consent, until recently, were assigned all capital executions of the law on criminals. It is not many years since it was almost impossible to induce sailors to start on long voyages on this day; but the history of the great discoverer Columbus gives a remarkable refutation of this superstition. On Friday, Aug. 21, 1492, he sailed on his voyage of discovery. On Friday, Oct. 12, he first discovered land. On Friday, Jan. 4, 1493, he sailed on his return to Spain, which if he had not reached in safety, the happy discovery might never have been known. On Friday, Mar. 15, he arrived at Palos. On Friday, Nov. 22, he arrived at Hispaniola, on his second voyage to America. On Friday, June 13, 1494, he discovered the continent of America, though unknown as such to him. Among the events of success and importance occurring on Friday, are the founding of St. Augustine, Fla., the oldest city in the United States; the arrival of the Mayflower (old style date) at the harbor of Provincetown, and the signing of the compact by the pilgrims on the same day; their landing on Plymouth rock (new style); George Washington born; Bunker hill seized and fortified; British surrender at Saratoga; Arnold's treason discovered; and the final surrender of the British forces at Yorktown. In the war with Mexico, the battle of Palo Alto began on Friday, and the treaty of peace between the two countries was ratified on Friday. In the same year, the question of our north-western boundary, with its menace of war, was settled by a treaty signed on Friday. In the war of the rebellion the main events occurring on Friday were: Fort Sumter captured by the confederates; Port Royal forts taken by the unionists; close of the battle of Pea Ridge; slavery abolished in the district of Columbia; Fort Pulaski taken by unionists; Memphis taken by unionists; Fredericksburg bombarded; battle of Gettysburg ended; Vicksburg bombarded; president Lincoln offered amnesty to all except the chief leaders of the rebellion; Lee defeated at Five Forks (three days' fighting); the union flag restored on Fort Sumter, and the assassination of Lincoln—both on Good Friday, April 14, 1865. A little knowledge and reflection must suffice to remand to the list of foolish superstitions the assignment of luck to days. ☺

DAYTON (*ante*), a prosperous and pleasant city, the seat of justice of Montgomery co., Ohio; on Great Miami river where Mad river comes in; it is also on the Miami canal; on the Atlantic and Great Western; the Cincinnati, Hannibal and Dayton; the Cleveland, Columbus, Cincinnati and Indianapolis; the Dayton and Union; the Pittsburg, Cincinnati and St. Louis; the Dayton and South-eastern, and some other railroads; pop. 40,000. The city has a fine court-house modeled after the Parthenon; nearly 50 churches, a seminary for girls, a Roman Catholic institute for boys; a good public library, eight or ten newspapers, a large manufactory of railroad cars, agricultural-implement works, breweries, distilleries, and many other manufactories. The rivers afford abundant water-power. Limestone quarries are a feature of the neighborhood. The streets are very wide and well paved, and the private residences are notable for quiet elegance. The Miami valley, in the midst of which Dayton is situated, is one of the most fruitful sections of the state. The city is the location of the national home for disabled soldiers and sailors, having a good hospital, a library, and extensive grounds. There have been as many as 2,000 inmates.

DAYTON, ELIAS, 1737-1807; b. N. J. He was among the British in the expedition against Canada. When the revolution broke out, he became one of a committee of safety, served as colonel in the army, was appointed commander of a brigade, and remained in active service through the war. After peace he was in the state legislature, and in congress. He had intimate friendship with Washington.

DAYTON, JONATHAN, LL.D., 1760-1824; b. N. J., son of Elias; a graduate of the college of New Jersey. He was a member of the legislature and speaker of the assembly; delegate to the convention to frame the federal constitution; representative in congress three terms, being speaker of the house during the last two terms; and in 1799, he was chosen U. S. senator.

DAYTON, WILLIAM LEWIS, LL.D., 1807-64; b. N. J., nephew of Jonathan; a graduate of the college of New Jersey, and a lawyer. He was in the state senate, and in 1842, a vacancy occurring in the U. S. senate, he was called to fill it. He was re-elected and took an active part in the leading questions of the day. In 1856, he was the republican candidate for vice-president. In 1857, he was attorney-general of New Jersey, and in 1861 was sent as minister to France, where he died.

DAY OF THE WEEK. To find the day of the week for any date, past or future, there are several methods, but the simplest and most easily understood is as follows: First, there is a "constant" for the *style*—for new style it is 6; for old style, 4. (In English chronology, new style begins 1752, Sept. 15.) Then there is a "constant" for each month: in new style, Jan., 1; Feb., 4; Mar., 4; April, 0; May, 2; June, 5; July, 0; Aug., 3; Sept., 6; Oct., 1; Nov., 4; Dec., 6; (on leap years the constants for Jan. and Feb. are one less, that is, for Jan., 0; for Feb., 3). Now (for new style), multiply the number representing the century by 5, and add one fourth to the product (omitting fractions). For instance: in 1880 the century number is 18, which multiplied by 5 makes 90, and one fourth of 18 (omitting fractions) is 4; hence the product is 94. Next add the number of the odd years (besides the century number), and add one fourth (omitting fractions) to their total. Next add the day of the month. Then add all these figures together, and finally, divide the sum by 7; the remainder will show the day of the week; remainder of 1 showing the first day of the week, or Sunday; remainder of 2 showing the second day of the week, or Monday, etc.; no remainder showing the 7th day of the week, or Saturday. Illustration: What is the day of the week for Jan. 1, 1881?

Constant for new style.....	6	Odd years.....	81
Constant for the month (Jan.).....	1	Add one fourth of 81.....	20
Century (18) multiplied by 5.....	90	Day of the month.....	1
Add one fourth of 18.....	4		
Total.....			203

Divide 203 by 7, and there is no remainder; so the year 1881 must begin on the 7th day of the week, or Saturday.

For old style the constant is 4, and the number of the century is multiplied by 6, without addition of the one fourth. The constants for months are the same as in new style, and one fourth (omitting fractions) is added to the odd years. Example for old style: On what day of the week did Columbus land on his voyage of discovery (Oct. 12, 1492)?

Constant for old style.....	4	Odd years (92) one fourth added.....	115
Constant for Oct.....	1	Day of the month.....	12
Century (14) multiplied by 6.....	84		
Total.....			216

Divide by 7, and the remainder is 6—the 6th day of the week, or Friday. For leap years, care must be taken in both old and new style to reduce the constants for Jan. and Feb. by one, for each of those two months.

DEAD COLOR, in painting, any color that has no gloss, or reflecting quality.

DEADENING OF NOISE. An easy method of preventing annoyance from the noise of machinery is to place rubber cushions under the legs of work benches, sewing-machines, or other appliances whence noise may proceed. *Chambers's Journal* describes a factory where the hammering of fifty coppersmiths was scarcely audible in the room below, their benches having under each leg a rubber cushion. Kegs of sand or sawdust may be used for the same purpose. A few inches of sand or sawdust is first poured into each keg; on this is laid a board or block upon which the leg rests, and around the leg and block is poured fine dry sand or sawdust. Not only all noise, but all vibration and shock are prevented; and an ordinary anvil, so mounted, may be used in a dwelling-house without annoying the inhabitants. To amateurs, whose workshops are usually placed in dwelling-houses, this device affords a cheap and simple relief from a great annoyance.

DEADHEAD, the superfluous length which is given to a gun in the casting, so that dross may be disposed of while the gun is left in a perfect state, which is accomplished by sawing off the extra length.

DEAD-LETTER OFFICE, a division in the United States post-office department at Washington for the reception, care, and disposition of letters and packages (except newspapers) that are uncalled for or cannot be delivered to the parties to whom they are directed at the various post-offices of the country. A statement of the business of this office for the year 1879, will give an idea of its importance and efficiency: The whole number of dead letters and packages received and disposed of during the year was 2,996,513, a decrease of 190,292 from last year's receipts. The fact that while there has been an increased number of letters mailed annually in this country, a reduced number has been sent to the department as dead, presents an anomaly which can be explained only upon the theory of increasing efficiency of the delivery service, and the growing popularity of the return-request system. The extent of the latter will be illustrated by the statement that of the 533,934 letters mailed in a single day at Baltimore, Boston, New York, and Philadelphia, 287,835 bore upon the envelope some clew by which they could be restored to the writer if undelivered, without the intervention of the dead-letter office. Of the letters opened, 16,007 contained \$31,591.49½; 13,755 contained drafts, checks, notes, money-orders, etc., to the value of \$1,105,762.07; 47,797 contained postage-stamps to the value of \$2,387.53; 24,372 contained receipts, certificates, paid notes, etc.; 24,024 contained photographs; and in 38,306 letters and parcels were found jewelry, books, clothing, merchandise, and miscellaneous articles in endless variety, from a small bottle of choice perfumery, to a large box of Limburger cheese. The increase in the number of letters containing money-orders and postage-stamps, and the decrease of those containing money, is attributed to the retirement of fractional currency, which formerly furnished a convenient means of making small remittances by mail. The mode of treating insufficient prepaid letters has been slightly modified during the past year, and the present system seems to be the most satisfactory of any which has yet been devised for disposing of that unfortunate class of correspondence. It is as follows: Those that bear a name and address, or a business card, post-office box, or other designation by which the writer can be identified, are immediately restored to the owner, or his attention invited to the deficiency of postage, by the postmaster at the mailing office. Of the balance, all "local" or "drop" letters are delivered by the postmasters to the persons addressed, upon payment by them of the necessary postage, after due notice of the fact and cause of detention. The remainder are sent to the dead-letter office, and are at once examined by an expert, who, taking into consideration the places of origin and destination of each letter, determines whether it can be returned to the writer in less time than would be required to collect the postage from the addressee and forward the letter to destination. And each letter is then treated in the way decided to be the quicker. Whenever a doubt exists, or where the difference is very small, the postage is collected and the letter forwarded, thus preserving the seal intact. The amount of money deposited to the credit of the post-office department from letters which could not be restored to the owners was \$3,323.39. The value of stamps received for postage on unpaid and short-paid matter forwarded to address, and upon unclaimed third and fourth class matter returned to senders, was \$4,471.70. Of the whole number (5,262,241) of registered letters and packages mailed in this country during the year, but 2,193 found their way into the dead-letter office, and of these 1,982 were successfully restored to their owners, 177 were filed subject to identification, and 34 outstanding; that is, opened and sent to postmasters for delivery, and the result not yet reported. The number of undelivered foreign registered letters was 3,685, which were all returned unopened to the countries of origin, and receipt was acknowledged. The number of ordinary foreign dead letters was 147,886, while those mailed in the United States and returned unclaimed by foreign governments was 94,669. This difference is accounted for by the migratory habits of foreigners, who, upon reaching this country, either fail to furnish a correct post-office address to their kinsmen in the old country, or do not profit by their privilege to have mail-matter forwarded from one place to another without additional postage charge.

DEAF AND DUMB (*ante*). The organization of institutions to educate the deaf and dumb in the United States dates from the early part of this century. An essay on *Teaching the Deaf to Speak*, by Dr. W. Thornton, of Philadelphia, was published in 1793, and in 1811, a grandson of Braidwood tried to establish a school in New York and Virginia, but failed in both instances. The circumstances which led to the opening of the Connecticut asylum at Hartford, April 15, 1817, are as follows: A deaf-mute little girl in the family of Dr. Cogswell, an eminent physician in Hartford, attracting some attention, it was soon afterward found that there were other deaf-mutes in the country. It was decided to send some one abroad to acquire the art of educating them; and to establish a school for this purpose funds were raised, and the Rev. F. F. Gallaudet, D.D., was selected for this work. He left the United States May 15, 1816, to execute this mission. The institution was incorporated by the Connecticut legislature in May, 1816, with an appropriation of \$5,000. Dr. Gallaudet returned to America in August of the same

year, accompanied by Laurent Clerc, a deaf-mute pupil of the abbé Sicard, and they immediately commenced collecting funds to start the school. The enterprise excited general interest; individuals and churches contributed liberally, and the sum of \$12,000 was raised in the course of a few months. Early in 1819, the government of Massachusetts followed the example of Connecticut by providing for the education in the asylum of twenty indigent pupils from that state. The appropriation was afterwards enlarged so as to meet the demands of this entire class. New Hampshire made a similar provision in 1821, and Vermont and Maine in 1825. In 1834, South Carolina and Georgia decided to send their indigent deaf-mutes to the asylum, and in 1848, Rhode Island came into the same arrangement. In 1819, congress made a grant to the institution of 23 acres of wild land, the proceeds of which now form a fund of \$339,000. It was owing to this munificent gift that the name of the school was changed to the "American Asylum." Before the school at Hartford was in operation, efforts had been made to establish a similar institution in the city of New York; a society was formed which was incorporated April 15, 1817, as the "New York Institution for Instruction of the Deaf and Dumb." Watson's book was taken as a guide, and articulation was taught in cases where the scholar appeared to possess the necessary aptitude, but this method did not prove very successful; and in 1827, the legislature, which had provided since 1822 for the support of 32 pupils, authorized an investigation by the superintendent of common schools of the state, who recommended in his report the introduction into the New York school of the improved methods in use at Hartford and Philadelphia. In consequence of that recommendation the directors finally succeeded in engaging, in 1831, the permanent services of Harvey P. Peet, LL.D., then one of the most efficient instructors in the American asylum. He served as principal from 1831 to 1867, and has a worthy successor in his son Isaac Lewis Peet, LL.D. Under the management of these two able teachers the institution has taken its place among the most successful schools for deaf-mutes in the world. Its grounds comprise about 26 acres, upon the banks of the Hudson river at Washington heights. The institution has a shoe-shop, tailor-shop, and carpenter-shop, a printing-office, garden, and seamstress rooms connected with the school, in which the pupils receive competent instruction to prepare them for self-support by manual labor, as in all our large asylums. Prof. E. Henry Currier, a leading teacher of this establishment, has secured better results than are usually met with in giving articulation to the dumb and lip-reading to the deaf. Most of his pupils have attained such distinctness of pronunciation and such quickness in recognizing the fleeting indications of words which are made in ordinary utterance, that they have given their instructor a reputation which is attracting more and more pupils of this class to the institution. The method of teaching articulation by visible speech was invented by A. Melville Bell in England about 1848, and consists of a species of phonetic writing based on the action of the vocal organs in producing sound. The Pennsylvania institution was organized at Philadelphia in 1820 by Joseph Seixas, a Jew of Portuguese descent. Among its first instructors were Laurent Clerc and Lewis Weld, the latter filling the office of principal till 1830, when he was recalled to Hartford to succeed Dr. Gallaudet. The Kentucky asylum at Danville was incorporated in 1823, and the Ohio asylum at Columbus was opened in 1829. Virginia, Indiana, Tennessee, Illinois, North Carolina, Georgia, South Carolina, Missouri, Wisconsin, and Michigan incorporated institutions, in the course of the next 25 years, and at the present time every state has provided for the education of the deaf and dumb who are adopted "as wards of the commonwealth;" the state regarding it as a primary duty that they shall not be excluded from those educational privileges accorded to every member of the community. Most of these institutions derive their whole income from annual legislative appropriations. The usual term of attendance is 5 years, but the legal term of instruction in most states is 7 years, and may be extended in cases of good scholarship; the average annual cost for board, lodging, and tuition for each pupil supported by the state is \$325. There are 51 institutions in the United States, a national college at Washington organized by E. M. Gallaudet, LL.D., and 6 institutions in Canada. Religious services have been conducted since 1850 by the Rev. Thomas H. Gallaudet, D.D., eldest son of the founder of the American asylum, at St. Ann's chapel for deaf-mutes, in New York city, but he and his assistants preach frequently in other parts of the country. The *American Annals of the Deaf and Dumb*, a quarterly periodical, has been published since 1847; conventions of the principals and instructors have been held every few years since 1850, at which papers containing valuable information have been read. Elementary manuals for the deaf-mute have been written in this country by H. B. Peet, J. S. Hutton, Jacobs, Keep, and others. An enumeration of the deaf and dumb is made in the decennial census of the United States, and the proportion is about 1 in 2,000. Of the post-natal causes it has been found that scarlet fever has since 1830 produced 20 to 25 per cent of the total cases; scrofula and spotted fever have also caused a large proportion. The following table gives statistics for the year 1879:

INSTITUTIONS FOR THE INSTRUCTION OF THE DEAF AND DUMB, 1879.

	NAME.	LOCATION	Date of Opening.	No. of Pupils.				No. Vols. in Library.	Total No. Pupils have received instruction.
				During the Year.	Male.	Female.	Semi-Mute.		
1	American Asylum.....	Hartford, Conn.....	1817	255	153	102	26	2300	2211
2	New York Institution... }	Washington Heights, New York, N. Y.....	1818	578	353	225	61	3850	2832
3	Pennsylvania ".....	Philadelphia, Pa.....	1820	356	197	159	43	5000	1870
4	Kentucky ".....	Danville, Ky.....	1823	131	72	59	10	500	730
5	Ohio ".....	Columbus, Ohio.....	1829	506	289	217	50	2500	1763
6	Virginia ".....	Staunton, Va.....	1839	107	63	44	21	1300	497
7	Indiana ".....	Indianapolis, Ind.....	1844	392	213	179	100	3003	1265
8	Tennessee School.....	Knoxville, Tenn.....	1845	110	65	45	10	175	.....
9	North Carolina Inst'n.....	Raleigh, N. C.....	1845	102	49	53	.....	600	.....
10	Illinois ".....	Jacksonville, Ill.....	1846	541	316	225	103	3300	1380
11	Georgia ".....	Cave Spring, Ga.....	1846	84	50	34	21	1000	293
12	South Carolina ".....	Cedar Spring, S. C.....	1849	36	15	21	2	.....	162
13	Missouri ".....	Fulton, Mo.....	1851	249	144	105	35	510	694
14	Louisiana ".....	Baton Rouge, La.....	1852	.....	.....	.....	.....	.....	.....
15	Wisconsin Institute.....	Delavan, Wis.....	1852	184	111	73	40	1000	555
16	Michigan Institution.....	Flint, Mich.....	1854	251	137	114	.....	1000	737
17	Iowa ".....	Council Bluffs, Iowa.....	1855	205	116	89	30	500	546
18	Mississippi ".....	Jackson, Miss.....	1856	56	24	32	8	200	.....
19	Texas Asylum.....	Austin, Texas.....	1857	56	35	21	11	175	185
20	Columbia Institution.....	Washington, D. C.....	1857	118	111	7	28	2200	389
21	Alabama ".....	Talladega, Ala.....	1860	50	30	20	2	500	150
22	California ".....	Berkeley, Cal.....	1860	110	70	40	11	.....	208
23	Kansas ".....	Olathe, Kansas.....	1862	140	72	68	.....	75	236
24	Le Couteulx St. Mary's Inst.	Buffalo, N. Y.....	1862	130	74	56	10	370	278
25	Minnesota Institution.....	Fairbault, Minn.....	1863	129	85	44	18	800	233
26	Inst'n for Improved Instr'n.	New York, N. Y.....	1867	133	58	75	21	500	206
27	Clarke Institution.....	Northampton, Mass.....	1867	87	43	44	15	764	177
28	Arkansas Institute.....	Little Rock, Ark.....	1868	77	45	32	3	75	160
29	Maryland School.....	Frederick City, Md.....	1868	106	61	45	5	2100	220
30	Nebraska Institute.....	Omaha, Neb.....	1869	78	46	32	8	447	106
31	Horace Mann School.....	Boston, Mass.....	1869	93	44	49	18	.....	.....
32	Whipple's Home School.....	Mystic River, Conn.....	1869	16	13	3	3	400	48
33	St. Joseph's Institute.....	Fordham, N. Y.....	1869	212	77	135	26	400	.....
34	West Virginia Institution...	Romney, West Va.....	1870	65	38	27	9	480	150
35	Oregon Institution.....	Salem, Oregon.....	1870	.....	.....	.....	.....	.....	.....
36	Institution for Colored.....	Baltimore, Md.....	1872	18	10	18	None.	.....	26
37	German Lutheran Asylum...	Norris, Mich.....	1873	.....	.....	.....	.....	.....	.....
38	Colorado Institute.....	Colorado Sp's, Col.....	1874	28	11	17	6	60	38
39	Erie Day-School.....	Erie, Pa.....	1874	.....	.....	.....	.....	.....	.....
40	Chicago Day-Schools.....	Chicago, Ill.....	1875	44	31	13	2	.....	76
41	Central N. Y. Institution.....	Rome, N. Y.....	1875	151	87	64	.....	110	170
42	Cincinnati Day-School.....	Cincinnati, O.....	1875	44	22	22	5	.....	53
43	Western Penn. Inst'n.....	Turtle Creek, Pa.....	1876	108	68	40	16	50	132
44	Western New York Inst'n.....	Rochester, N. Y.....	1876	129	76	53	12	.....	138
45	Portland Day-School.....	Portland, Me.....	1876	19	11	8	6	.....	21
46	St. John's Catholic Inst'n...	St. Francis Sta., Wis.....	1876	53	37	16	2	.....	78
47	Rhode Island School.....	Providence, R. I.....	1877	13	7	6	7	.....	13
48	Mr. Knapp's School.....	Baltimore, Md.....	1877	18	12	6	3	2000	20
49	Phonological Institute.....	Milwaukee, Wis.....	1878	21	12	9	None.	.....	21
50	St. Louis Day-School.....	St. Louis, Mo.....	1878	39	20	19	3	.....	.....
51	School of Articulation.....	Marquette, Mich.....	1879	3	1	2	1	.....	3
51	Institutions in the U. S.....	.....	.....	6431	3674	2757	816	.....	.....
	National College.....	Washington, D. C.....	1864	60	60	None.	27	2300	205
1	Catholic Inst'n (Male).....	Montreal, Can.....	1848	110	110	.....	4	400	250
2	Catholic Inst'n (Female).....	Montreal, Can.....	.....	.....	.....	.....	.....	.....	.....
3	Halifax Institution.....	Halifax, N. S.....	1857	67	43	24	3	.....	236
4	Ontario ".....	Belleville, Ontario.....	1870	269	163	106	17	300	455
5	Mackay ".....	Montreal, Can.....	1870	32	22	10	4	150	62
6	New Brunswick Inst'n.....	Portland, N. B.....	1873	12	10	2	None.	400	61
6	Institutions in Canada.....	.....	.....	490	348	142	28	.....	.....

DEAN, WILLIAM, D.D., b. N. Y., 1807; became a missionary in 1834, under the direction of the American Baptist missionary union. His labors have been almost entirely among the Chinese in their own country and in Siam.

DEANE, JAMES, 1748-1823; b. Conn.; graduate of Dartmouth, and for many years a missionary among the New York and Canadian Indians. He was an officer in the revolutionary war, and later in life, a judge in Oneida co., N. Y.

DEANE, JAMES, 1801-58; b. Mass.; a physician and surgeon. He was the discoverer, 1835, of the fossil foot-prints in the red sandstone of the Connecticut valley, and at the time of his death was engaged upon an elaborate memoir on the subject for the Smithsonian institution. He wrote much on medical subjects.

DEANE, SILAS, 1737-89; b. Conn.; graduate of Yale, and member of the first continental congress. He was sent to Paris as political and financial agent of the colonies. Benjamin Franklin and Arthur Lee joined him afterwards, and he was on the committee which negotiated the treaty of peace with France. He was recalled in 1777 in consequence of extravagant contracts in which he had involved the colonies. An account of his doings was demanded on the floor of congress, but a full explanation was declined on the ground that his papers were in Europe. The affair put him under a cloud, and after many defensive and aggressive publications on the subject, he returned to Europe, 1784, and died in poverty.

DEARBORN, a co. in s.e. Indiana, on the Ohio river; traversed by the Whitewater canal, the Ohio and Mississippi and three other railroads; 291 sq.m.; pop. '70, 24,116. Chief productions, wheat, corn, oats, barley, hay, butter, etc. Co. seat, Lawrenceburg.

DEARBORN, HENRY, 1751-1829; b. N. H.; a general in the revolutionary war. When news came to Portsmouth of the battle of Lexington, he quitted his practice as a physician, and marched with 60 volunteers so speedily as to arrive at Cambridge (65 m.) early the next day. He was in the battle of Bunker Hill, and with Arnold's expedition to Quebec, where he was taken prisoner. He was with Gates at the capture of Burgoyne, at Monmouth, and at Yorktown. Washington appointed him marshal for the district of Maine in 1789. In 1812, he was made senior maj.gen. of the federal army, and put in command of the northern department. In 1813, he captured York, Canada, and fort George, at the mouth of the Niagara river. He resigned in 1815, and in 1822 was sent as minister to Portugal. Two years afterwards, at his own request, he was recalled.

DEATH ADDER. See ACANTHOPHIS.

DE AUGMENTIS SCIENTIARUM, a treatise by lord Bacon, which forms the opening chapter of his *Instauratio Magna*; and after the *Novum Organum*, his most important treatise.

DE BAY, MICHAEL. See BAJUS, *ante*.

DEBENTURE (*ante*), in the United States, a certificate given in pursuance of law for a sum due by the United States, payable at the time specified, to an importer for drawback of duties on merchandise imported or exported by him, provided the duties chargeable on the importation or exportation of such merchandise shall have been discharged prior to the time aforesaid.

DEBT (*ante*), as in England so in the United States, a debt is "something owed;" in contracts, a sum of money due by certain and express agreement; in general, all that is due a man in any form of obligation or promise, or any claim for money. An *active* debt is one due a person. A *doubtful* debt is one the payment of which is uncertain. A *hypothecate* debt is one which constitutes a lien upon an estate; a *judgment* debt is one which is evidenced by matter of record; a *liquid* debt is one which is immediately and unconditionally due; a *passive* debt is any one which a person owes; a *privileged* debt is one which is to be paid before others in case a debtor is insolvent; the privilege may result from the character of the creditor, as where the debt is due the United States, or from the nature of the debt, as when it is for funeral expenses. A debt may be evidenced by writing under seal, or by a simple contract. The distinguishing and necessary feature is that a fixed and specific quantity or sum is owing, and no future valuation is required to settle it.

DEBT, NATIONAL (*ante*). The public debt of the United States was first reported, 1791, two years after the organization of the government, at \$75,463,476.52. In 1812, at the commencement of the second war with England, it had fallen to \$45,209,737.90. That war brought it up to a total of \$127,334,933.74. After peace, the reduction was from \$3,000,000, to \$10,000,000 per year until in 1836 it reached its lowest point, being only \$87,515.05. Thenceforward it increased one year and decreased the next, until in 1860, the year before the rebellion, it was \$61,842,287.88, and the annual interest was \$3,443,687. This was a rate per capita on the whole population of \$1.91 debt and 11 cts. interest. The most powerful rebellion which ever rose against a modern government, made the raising of enormous sums of money an imperative necessity. Two small loans had been made just before; in 1858, \$20,000,000 in 5 per cts., and in 1860, \$21,000,000 in 6 per cts., the first to run 15, and the last 20 years. Of the last loan, only \$7,022,000 was issued. Of the loans made necessary by the war of the rebellion, the first was Feb. 8, 1861, \$25,000,000 at 6 per ct., to run 20 years, of which \$18,415,000 was reissued. Mar. 2, 1861, six per ct. treasury notes were authorized, and \$35,364,450 issued. Same date, \$1,095,850 reissued to pay the Oregon war debt. July 17, 1861, \$250,000,000, at 7 per ct., to run 20 years, with authority to issue any part in the form of treasury notes running three years at 7 3-10 per ct. interest, or on notes not bearing interest, but payable on demand, or in treasury certificates for one year bearing 3 65-100 per ct. interest; the whole amount of demand notes not to exceed \$50,000,000. An act of Aug. 5, 1861, authorized the issue of 6 per ct. bonds, running 20 years, to exchange for the one and three year notes just mentioned, with accumulated

interest, at any time before their maturity; and the demand notes were made receivable for all dues to the government. Before the close of the year, the demand notes, at first rejected by the banks, were at a premium, and the interest-bearing notes were readily convertible into permanent 6 per ct. bonds. Feb. 12, 1862, \$10,000,000 more of demand notes were issued. In the same month the first great war loan was authorized—\$500,000,000 of 6 per ct. bonds, redeemable after five and payable after 20 years. The loan was readily taken, and the full amount was issued. In 1864–65, \$15,000,000 more was authorized of the same loan. In Feb., 1862, \$150,000,000 of legal-tender notes were authorized, of which \$50,000,000 were to take the place of demand notes. In July, 1862, \$150,000,000 more were authorized; and an equal amount in addition in Mar. 1863; making \$450,000,000 in all. Those issues formed the currency known as “greenbacks,” from the color of the paper. An act in Feb., 1862, authorized the acceptance of \$25,000,000 of deposits, increased in Mar. to \$100,000,000, on which 5 per ct. interest was paid. In June, 1864, \$50,000,000 more was authorized at 6 per cent. This was a temporary loan, to be repaid on ten days’ notice, and was all redeemed before the close of 1866. In Mar., 1862, congress authorized the issue of certificates of indebtedness to public creditors in the adjustment of claims, running one year at 6 per cent. There were \$561,753,241 issued, all redeemed before 1866. In July, 1862, postage-stamps were issued for currency, and made a legal tender for sums less than \$5. In Mar., 1863, fractional currency was authorized in place of postage-stamps, the amount limited to \$50,000,000. In Mar., 1863, a loan of \$900,000,000 was authorized, principal and interest payable in coin; but only \$75,000,000 was issued. The same act authorized \$400,000,000 in one, two, and three year treasury notes, interest not over 6 per ct., payable in ordinary money, and to be a legal tender for their face value. The actual issues were: of one-year notes at 5 per ct., \$44,520,000; two-year notes at 5 per ct., \$166,480,000; three-year notes at 6 per ct., \$266,595,440, making the whole issue \$477,595,400; all canceled or exchanged before May 15, 1868. In Mar., 1864, a loan of \$200,000,000 was authorized at 5 or 6 per ct., principal and interest payable in coin: \$196,117,300 were issued at 5 per ct. to run 40 years (the 10-40s of 1864), and \$3,882,500 at 6 per cent. Most of the 5 per cts. brought premiums from 1 to 7 per cent. In June, 1864, a loan of \$400,000,000 was authorized at 6 per ct. (the 5-20s of 1864), of which \$121,561,300 was issued. In June, 1864, congress authorized the issue of \$200,000,000 in 7-30 treasury notes, and in Mar., 1865, the sum was increased to \$600,000,000 more. The whole issue was \$829,992,500 of 7-30 interest-bearing notes, and the whole loan was redeemed by the middle of July, 1868. In Mar., 1865, a loan was authorized of \$600,000,000 in 6 per ct. 5-20 bonds, to be used only for the payment of treasury notes or other obligations of the nation. Two issues were made: July 1, \$322,988,950; and Nov. 1, \$203,327,250. Under the same act, an issue was made in July, 1867, of \$379,616,050, and in July, 1868, \$42,539,350, all to redeem treasury notes and other obligations; but in no case to increase the public debt. In Mar., 1867, and July, 1868, there were issued \$85,150,000 of temporary loan certificates of deposit, bearing interest at 3 per ct., to redeem compound-interest notes. In July, 1870, the great refunding act was passed. The secretary of the treasury was authorized to issue \$200,000,000 at 5 per ct.: \$300,000,000 at 4½ per ct.; and \$1,000,000,000 at 4 per ct. of 30-year bonds, principal and interest payable in coin, to be used only to redeem the 6 per ct. or other early bonds. Besides these issues, there were guarantee bonds issued to the Pacific and other railroads, secured by mortgage on the roads. In Jan., 1871, the 5 per ct. bonds were increased to \$500,000,000.

These enormous financial transactions have no parallel for extent in the world’s history. Yet for a time there was much fear that such loans could not be floated; but when they were proved possible without recourse to the capitalists of foreign countries, the loyal people of the union had abundant cause for congratulation. The loan of 1862, \$515,000,000, was the greatest in amount and the most successful thus far attempted. Afterwards, however, loans were not easily made, and the government was compelled to resort to currency and treasury notes, and also compound-interest notes, and certificates of indebtedness. The greatest test of the financial strength of the nation fiercely struggling to maintain its political existence, was in 1864. On the 11th of July, in that year, gold touched its highest point, \$2.85; and a paper dollar was worth in gold only about 38 cents. Holders of government securities became uneasy, and even small temporary loans were placed with difficulty. Towards the close of the year, however, there was a gradual reaction; it was plain that the rebellion must soon collapse; gold fell rapidly, and currency rose correspondingly; and it became evident that no more large loans would be required.

The various bonds constituting the back of the public debt have always borne a premium in current money, and have steadily increased in gold value, thus affording a striking proof of the stability of the credit of the nation. When the first purchases in extinguishment of the principal of the debt were made, May, 1869, the net cost of the bonds in gold was 83 per cent of par value: Jan. 5, 1870, 93½ per cent; Jan. 4, 1871, 97 per cent; and ever since practically at par.

Progress of the Debt.—In the following table, prepared at the treasury department, will be seen the rapid rise and gradual declension of the vast debt of the country, due entirely to the southern rebellion:

ANALYSIS OF THE NATIONAL DEBT FROM JULY 1, 1856, TO JULY 1, 1879.

Year.	Total interest-bearing debt.	Annual interest charge.	Debt bearing no interest.	Outstanding principal.	Total debt, less cash in Treasury.	Population of the United States.	Debt per capita.	Interest per capita.
1856—July 1.....	\$31,732,761 77	\$1,869,445 70	.....	\$31,972,537 90	\$10,965,953 01	28,083,000	\$0 36	\$0 07
1857.....	28,460,938 93	1,672,767 53	.....	28,690,831 85	9,998,621 76	28,916,000	35	06
1858.....	44,700,838 11	2,146,670 28	.....	41,911,881 63	37,900,191 72	29,753,000	28	07
1859.....	58,290,738 11	3,135,166 28	.....	58,496,837 88	53,405,234 19	30,596,000	1 75	10
1860.....	64,640,828 11	3,443,687 29	.....	61,842,287 88	59,964,402 01	31,443,221	1 91	11
1861.....	90,380,873 95	5,092,630 43	.....	90,580,873 72	87,718,660 80	32,064,000	2 74	16
1862.....	365,304,826 92	22,048,509 59	118,591,390 00	524,176,412 13	505,312,752 17	32,704,000	15 45	67
1863.....	707,591,634 47	41,854,148 01	411,767,456 00	1,119,772,138 63	1,111,350,737 41	33,365,000	33 31	1 25
1864.....	1,359,930,763 50	78,853,487 24	455,437,271 21	1,815,784,370 57	1,709,452,277 04	34,046,000	50 21	2 32
1865.....	2,221,311,918 29	137,742,617 43	458,090,180 25	2,680,647,869 74	2,671,815,856 76	31,748,000	76 98	3 97
1865—August 31...	2,381,530,294 96	150,977,697 87	461,616,311 51	2,844,649,626 56	2,756,451,571 43	35,228,000	78 25	4 29
1866—July 1.....	2,332,331,207 60	146,068,196 29	439,969,874 04	2,773,236,173 69	2,630,036,163 84	35,469,000	74 32	4 12
1867.....	2,248,067,387 66	138,892,451 39	428,218,101 20	2,678,126,103 87	2,508,451,211 69	36,211,000	69 26	3 84
1868.....	2,202,088,727 69	128,459,598 14	408,401,782 61	2,611,687,551 19	2,480,853,413 23	36,973,000	67 10	3 48
1869.....	2,016,455,722 39	118,584,960 34	421,131,510 55	2,588,452,213 94	2,432,771,873 09	37,756,000	64 43	3 32
1870.....	1,934,696,750 00	111,949,320 50	430,508,064 42	2,480,673,427 81	2,331,169,956 21	38,558,371	60 46	3 08
1871.....	1,814,794,100 00	103,988,463 00	416,365,680 06	2,353,211,332 32	2,246,994,068 67	39,555,000	56 81	2 83
1872.....	1,710,483,950 00	98,049,804 00	450,530,431 52	2,233,251,328 78	2,149,780,530 35	40,604,000	52 95	2 56
1873.....	1,738,930,750 00	98,706,004 50	472,069,332 94	2,293,482,993 20	2,105,462,060 75	41,701,000	50 49	2 35
1874.....	1,722,676,300 00	96,855,630 50	509,543,128 17	2,251,690,468 43	2,104,149,153 69	42,856,000	49 10	2 31
1875.....	1,710,685,450 00	95,104,269 00	498,182,411 69	2,232,284,531 95	2,090,041,170 13	44,060,000	47 44	2 19
1876.....	1,711,888,500 00	95,160,613 50	465,807,196 69	2,180,395,066 95	2,060,925,340 25	45,316,000	45 48	2 10
1877.....	1,794,735,650 00	94,654,472 50	476,764,031 84	2,205,301,392 10	2,019,275,431 37	46,624,000	43 31	2 06
1878.....	1,737,643,700 00	83,773,778 50	410,835,741 78	2,245,485,072 04	1,999,382,280 45	47,983,000	41 67	1 97
1879.....					1,996,414,905 03	49,395,000	40 42	1 65

The progress of refunding is shown by the statement that on July 1, 1879, there had been issued of 4 per cent bonds, \$741,522,000; of 4½ per cent, \$250,000,000. The other bonds then out were, of 3 per cent (navy pension fund), \$14,000,000; of 5 per cent, \$508,440,000; of 6 per cent, \$283,681,350, the total of all being the interest-bearing debt. By reference to the last two columns of the table a clearer idea may be had of the effect of the debt on the people than by the study of the great mass of figures. The very highest point of the national debt was reached on the last day of Aug., 1865, when the total was (less cash in the treasury) \$2,756,431,571.43. This gave as the average of national debt for every person in the United States, \$78.25, in addition to which there was the annual interest charge of \$4.29 for each person. In 14 years (less one month) the debt was brought down to \$1,996,414,907.03—a reduction of \$760,016,664.40; a decrease of more than 27 per cent, while the interest charge, mainly through refunding at lower rates, had been brought down from \$4.29 to \$1.69 per capita, a reduction of nearly 40 per cent.

DEBTOR AND CREDITOR, Laws of (*ante*). In the United States, debtors find relief under insolvency laws, besides that afforded by a national bankrupt law when such is in existence. The laws vary somewhat. In California, Maryland, Minnesota, New York, and Wisconsin, an insolvent debtor may be discharged upon petition and

upon making an assignment of all his property (except certain articles necessary for the support of himself or his family) for the benefit of his creditors equally. The same benefits are secured: in Alabama, to one imprisoned on a judgment for not paying a fine; in Arkansas and Illinois, to one imprisoned or liable to be arrested; in Connecticut, to one owing \$100; in Delaware, to a resident of the state for one year who is imprisoned, unless committed by the chancery court; in Georgia, to one who has not within a year lost money by gambling; in Massachusetts, to an inhabitant who owes more than \$200; in Missouri, to one imprisoned for fines, costs, or breach of the peace; in North Carolina, to one imprisoned 20 days; in Ohio, to a resident of the state for two years, or of the county for six months, or in custody after 60 days; in Pennsylvania, to a resident of the state for six months, or who had been in jail three months, or is detained on civil process, held on bail prise, or not arrested; in Rhode Island, to an inhabitant for three years owing more than \$100 (but the court may ignore the residence); in South Carolina, to one sued, or within one month after being in custody; in Texas, to a bankrupt citizen, males at 21, females at 18. In all states, some considerable property is reserved to the debtor for the support of himself and family. When debts are fraudulently contracted, or where payment is sought to be evaded by fraud, the perpetrators of the fraud are excluded from bankruptcy and insolvency laws. With regard to the arrest of debtors, the law of the state of New York has been followed by most of the states. In New York, imprisonment for debt, except in certain cases, was abolished in 1831. In the code adopted in 1849, arrest is prohibited in civil actions, except in certain specified cases, viz.: in actions for injury to the person or character, or for injury or wrongfully taking or detaining property; embezzlement by public officers, or persons acting in a private judiciary capacity; for misconduct in office, or in any professional employment; in actions to recover possession of personal property, where it is concealed or kept out of the reach of the sheriff; and where the defendant has been guilty of fraud in contracting the debt or in avoiding payment. Women are exempt from arrest in all cases except actions for willful injury to person, character, or property.

DEBTORS, ABSCONDING (*ante*). In all the states of the union there are statutes defining this offense. It has been decided that a person who has been but transiently in a state, with no intention of making it his permanent home, or one who openly changes his residence, is not an absconding debtor, and cannot be so treated.

DEBTORS, IMPRISONMENT OF (*ante*). There is little left of imprisonment for debt in any of the United States. In New York, an act for its abolition was passed in 1831. Its main provisions are that no person shall be imprisoned in civil service, at law or in execution in equity founded on contracts, except in the following cases: In actions for fines and penalties, or on promises to marry, or for moneys collected by any public officer, and in actions for any misconduct or neglect in office, or in any professional employment. Moreover, in cases of debt claimed in any suit or founded upon any judgment or decree of a court of record, the defendant may be arrested upon an affidavit of the plaintiff stating the sum due to be more than \$50, and charging the commission of certain fraudulent acts; as, that the defendant is about to remove any of his property out of the jurisdiction of the court to defraud his creditors, that he fraudulently conceals property, or has assigned, removed, or disposed of it with like intent, or that the debt was fraudulently contracted. The defendant is thereupon committed to prison, unless he pay the debt and costs of the suit or give security to pay them within a certain time, or unless he make an assignment of his property for the benefits of his creditors, or give security that he will make such an assignment, or that he will not dispose of any of his property until the demands against him are satisfied. If he make such an assignment of his property, there are provisions in the act by which he may be discharged from his indebtedness. Further provisions of an analogous nature to those contained in this act were embodied in the New York code, adopted 1848. The debtor may be arrested and imprisoned either on mesne or on final process. The principal grounds of arrest are, with few exceptions, the same as those enumerated in the previous act. The defendant, when arrested upon mesne process, may be admitted to bail. The imprisonment upon final process is for the same causes, and is applicable when the execution against the debtor's property has been returned unsatisfied, in whole or in part. The most important difference between these provisions and those of the earlier statute is that, in the recent act, means are provided only for securing the payment of the debt of an individual creditor, and there is no assignment provided for in behalf of all the creditors, or any means afforded of obtaining a discharge of the debtor from all his obligations. A large number of the states have adopted similar statutes.

DEBTS, RECOVERY OF (*ante*), in the United States ordinarily by an action at law. Such action lies where even the sum due is certain or ascertained in such a manner as to be readily reduced to a certainty, without regard to the manner in which the obligation was incurred or is evidenced. It is thus distinguished from *assumpsit*, which lies as well where the sum due is uncertain as where it is certain, and from *covenant*, which lies only upon contracts evidenced in a certain manner. It is said to lie in the *debet* and *detinet*. Debt in the *detinet* for goods differs from *detinue*, because it is not essential in this action, as in *detinue*, that the specific property in the goods should have been vested in the plaintiff at the time the action is brought. The declaration, when the

action is founded on a record, need not aver consideration. When it is founded on a specialty, it must contain the specialty, but need not aver the consideration; but when the action is for rent the deed must be declared on. When it is founded on a simple contract, the consideration must be averred; and a liability or agreement, though not necessarily an express promise to pay, must be stated. The plea of "no debt" is the general issue upon the action on a simple contract, on statutes, or where a specialty is matter of inducement merely. "It is not true," is the common plea when on specialty, denying the execution of the instrument; and "not on record," when denying the existence of the record. The judgment is, generally, when for the plaintiff, that the plaintiff receive his debt and costs; and when for the defendant, that the defendant receive his debt and costs. A judgment in an action for the recovery of a debt itself constitutes a new debt, on which another action may be brought, unless there be some statutory restriction, as there is in some of the states. Under the codes of procedure in some states the technical action for debt no longer exists, as there is but one civil action.

DECAMERON, the title of a collection of stories written by Boccaccio, and supposed to have been told in successive nights by guests who were escaping from a plague then raging in Florence, about 1348.

DE CAMP, JOHN C., b. N. J., 1812; midshipman, 1827; captain, 1862; served with distinction in the war of the rebellion under Farragut, and was retired in 1870 with the rank of rear-admiral.

DECAPOLIS, a district of Palestine anciently containing, as its name implies, ten cities that were classed together not because of their geographical position, but because of their political resemblance. Soon after the Romans had conquered Syria (65 B.C.) they rebuilt ten cities, placed colonies in them, and endowed them with special privileges. Writers are not agreed concerning the names of all the ten, and it is probable that the original number was enlarged. Pliny names them as Damascus, Philadelphia, Raphana, Gadara, Hippe, Dion, Pella, Canatha, Galasa (Gerasa) on the e. of the Jordan, and Scythopolis on the west. At the time of Christ they were all prosperous and contained large numbers of Gentile inhabitants; but at present Damascus only retains its importance. Scythopolis, or Beth-Shean, anciently next in size, still exists as the village of Beisan; others are of interest only for their ruins, those of Gerasa being especially magnificent.

DECATUR, a co. in s.w. Georgia, on the Florida border; bounded w. by the Chattahoochee; reached by the Atlantic and Gulf railroad, which terminates at the co. seat; 1062 sq.m.; pop. '70, 15,183—7,718 colored. The soil is moderately fertile, producing corn, cotton, tobacco, rice, molasses, etc. Co. seat, Bainbridge.

DECATUR, a co. in s.e. Indiana, intersected by the Indianapolis, Cincinnati, and Lafayette railroad; 372 sq.m.; pop. '70, 19,053. Surface level or undulating, with rich soil, producing wheat, corn, oats, hay, potatoes, butter, and wool. Co. seat, Greensburg.

DECATUR, a co. in s. Iowa, on the Missouri; 528 sq.m.; pop. '75, 13,249. It is a prairie region, and agriculture is the chief business. Co. seat, Leon.

DECATUR, a co. in s.w. Tennessee, on the Tennessee river; intersected by Beach river; 325 sq.m.; pop. '70, 7,772—1056 colored. It is level, with fertile soil, producing corn, wheat, cotton, butter, tobacco, etc. Co. seat, Decaturville.

DECATUR, a village in Georgia; the seat of justice of De Kalb co.; on the Georgia railroad, 5 m. e. of Atlanta; pop. '70, 401. The place is noted for fine climate and beautiful situation. It was here that the confederates under Hood fell upon the unionists under Thomas and Schofield in the hope of hindering the approach of Sherman to Atlanta in the famous "march to the sea." They failed, however, losing 5,000 men; the loss on the other side was 1500.

DECATUR, a city and seat of justice in Macon co., Ill., on Sangamon river, very near the middle of the state, at the junction of five or six railroads; 38 m. from Springfield, and 160 from Chicago; pop. about 12,000. It is in a fine agricultural region, and has many manufactories, including a large rolling-mill.

DECATUR, STEPHEN, 1751—1808; b. R. I. He was early engaged in sea-faring, and during the revolution had command of several privateers. In 1798, he became a capt. in the navy and was put in charge of the *Delaware*, 20 guns, with which he captured two French privateers. He was discharged from service, 1801.

DECATUR, STEPHEN, JR., 1779—1820; b. Md.; son of capt. Stephen, and like him a sea-farer, though in the regular navy. He served in the smaller offices from 1798 to 1803 without special distinction. In Nov. of the latter year he had command of the *Argus*, in commodore Preble's squadron, and afterwards of the *Enterprise*. At this time he made a dash into the harbor of Tripoli and burnt the frigate *Philadelphia*, which had fallen into the hands of the Algerine enemy. In recognition of this act he was made capt., and presented with a sword. Decatur had much more hard fighting in the harbor and neighborhood of Tripoli, and in all cases showed the utmost daring and bravery. The war with Tripoli ended 1805, and from that time until the war with Eng-

land, Decatur was in various duties of small importance. In 1812, he was in command of a squadron off the Atlantic coast, and Oct. 12, in the *United States*, captured the English frigate *Macedonian*. In May, 1813, he found himself blockaded in Long Island sound, and was forced to remain more than a year in the harbor of New London. In Jan., 1815, he attempted to escape from his blockade in the frigate *President*, but his ship struck on the bar at Sandy Hook, and, after a determined contest with four of the enemy's ships, he surrendered and was taken to Bermuda with his frigate as a prize. He was soon paroled, and in May, 1815, sailed from New York with three frigates, one sloop, and six brigs and schooners to operate against Algiers. He captured two important vessels; but the war was soon concluded by a treaty abolishing demand upon the United States for tribute, and giving up all prisoners. He made arrangements to the same effect with the rulers of Tunis and Tripoli, and thus put an end to the enslaving of the Americans by the corsairs of those countries. In Nov., 1815, he was made navy commissioner, holding the office until his death, which occurred in a duel with commodore James Barron.

DECAZES, ÉLIE, Duc, 1780-1860; a French lawyer and statesman. He was secretary to Letitia Bonaparte, but went over to the Bourbons in 1814, and became prefect of police in Paris. In 1815, he was made minister of police; in 1818, minister of the interior; and in 1819, prime-minister. In 1820, he was appointed ambassador to England. He was a strong opponent to the extreme measures of the government during the reign of Charles X., and after 1830 adhered to Louis Philippe.

DECENNIAL GAMES, celebrated in Rome once in ten years, commemorating the nominal refusal of Augustus to be emperor for life, and his preference for re-election once in ten years. They were kept up as a popular amusement until the last days of the empire.

DE CHARMS, RICHARD, 1796-1864; b. Philadelphia, author and clergyman. He was a Swedenborgian pastor in Cincinnati, Philadelphia, and Baltimore. He established the *New Jerusalem Magazine*, the first three numbers of which he set up in type and printed, having been a printer. He was editor of the *Precursor* and *The New Churchman*. His principal work is *The New Churchman Extra*, a treatise on polemics and church history.

DE'CIUS MUS, PUBLIUS, father, son, and grandson, all Roman consuls and mythical heroes. It is told of the first two that before a battle which might be decisive they had visions simultaneous in time and import, that one of them must be devoted to the infernal gods. Instead of casting lots to decide which, they agreed that the infernal gods should have the man whose columns first wavered in the fight. The columns of Decius wavered first, and rushing upon the enemy in a spirit of self-immolation he perished. But a moment afterwards his men recovered and won the victory. Similar stories are told of the third, and of some others of the family.

DECLARATION OF INDEPENDENCE, AMERICAN, agreed upon July 4, 1776, by the thirteen American colonies then in revolt against England. Its history is brief but important. Early in 1776, the delegates in congress from Massachusetts were directed to vote for independence of England. Soon afterwards several other colonies sent similar instructions. Washington wrote: "A reconciliation with Great Britain is impossible. When I took command of the army I abhorred the idea of independence; but I am now fully satisfied that nothing else will save us." Pennsylvania and New York were the last to acquiesce in the demand for a declaration. The tenor of these instructions to the delegates from their constituents was in favor of cutting loose from Great Britain entirely and forming an independent government. June 7, 1776, Richard Henry Lee moved in congress that "these united colonies are and of right ought to be free and independent states." Four days later the motion was adopted, and two committees were raised to present a declaration and the plan of a confederation. On the declaration committee were Jefferson, Franklin, John Adams, and Roger Sherman. They reported June 28, but action was delayed, as the New York and Pennsylvania congressmen having received no special instruction, thought they had no authority to vote for the declaration. The Declaration of Independence was drafted by Thomas Jefferson, and but very slightly changed from his copy. When it came up for final action it received the vote of every delegate. The vote was taken by colonies, and every colony gave unanimous approval. It was immediately signed by the names of 56 members present, and as soon as the slow means of printing and circulating in those days could spread it, it went forth not only as the defiant answer of the colonies to the demands of the mother country, but as a claim for the political emancipation of mankind. It ought to be known by heart by every boy and girl in America. Not many years ago the reading in full of the Declaration of Independence was considered as necessary in any social celebration of the 4th of July as a prayer in religious services; but in these days, partly from carelessness, but more from the large infusion of foreigners whose habits and ideas have greatly modified the primitive notions of our own people, the custom has fallen into disuse.

DECLARATION OF INDEPENDENCE, MECKLENBURG. See MECKLENBURG, DECLARATION OF INDEPENDENCE.

DECLARATION OF PARIS, a protocol signed by the representatives of all the powers present at the congress of Paris in 1856, and subsequently accepted as a binding engagement of public law by all the other powers (except the United States, Spain, and Mexico) for the purpose of settling and defining certain rules of maritime law, in time of war, on points of great moment to belligerent and neutral states. The four propositions agreed to were: 1. Privateering is and remains abolished. 2. The neutral flag covers enemies' good, with the exception of contraband of war. 3. Neutral goods, with the exception of contraband of war, are not liable to capture under an enemy's flag. 4. Blockades, in order to be binding, must be effective—that is to say, maintained by a force sufficient readily to prevent access to the coast of the enemy. (From *Encyclopædia Britannica*.)

DECLINOMETER. See DECLINATION NEEDLE, *ante*.

DECO'RAH, a city, the seat of justice in Winneshiek co., Iowa, on a branch of the Milwaukee and St. Paul railroad; and on the upper Iowa river; pop. '75, 2,596. It is the seat of the Norwegian Lutheran college, and has many important manufactures.

DECRETALS (*ante*) are the answers sent by the pope to applications made to him as the head of the church, chiefly by bishops, but also by synods, and even by private individuals, for guidance in cases involving points of doctrine or discipline. In the early days of the church these replies, as circulated through the various dioceses, furnished precedents to be observed in analogous circumstances. From the 4th c. onward they formed the most prolific source of canon law. FALSE DECRETALS is the term applied to what are supposed to be some of the most famous of literary forgeries, including a collection of papal letters, canons, etc., of which some are probably genuine, but the greater part spurious. The first edition appeared about the middle of the 9th c., and from the preface is supposed to be the work of Isidorus Mercator, a fictitious name thought by some to indicate bishop Isidore, of Seville. After the preface and some minor apocryphal documents, the first part contains 50 of the apostolic canons, and 60 spurious decretals from Clement (101 A.D.) to Melchiades (314), chronologically arranged. The second part consists chiefly of canons taken from the *Hispania*, a collection made towards the close of the 7th century. The third part contains 35 fictitious decretals. These false decretals were received everywhere as true, until cardinal Nicolas de Cusa, in the 15th c., first expressed doubts of their genuineness. They were fiercely attacked by the reformers, and not long afterwards the stigma of "false" was fairly fixed upon them.

DECU'RIO, a Roman cavalry officer, commanding 10 men. DECURIONES MUNICIPALES were Roman provincial magistrates who had the same power in free and corporate towns as the senate had in Rome. At first numbering 10, as their name implies, they frequently numbered 100 in later times. Their duty was to watch over the interests of their fellow-citizens, and increase the revenues of the commonwealth. They were required to be 25 years of age, and to possess a certain income.

DECUSSA'TION, in anatomy, the crossing of nervous filaments. Certain fibers of the anterior pyramids and lateral columns of the medulla oblongata are so crossed freely from side to side; so that disease on one side of the brain often leads to paralysis on the other side of the body.

DEDHAM, the seat of justice of Norfolk co., Mass., on Charles river, 10 m. s.w. of Boston; pop. '70, 7,342. There is railroad connection with Boston and Providence. By a canal from the Charles to the Neponset river ample water-power is obtained for a number of important manufactories. The court-house is a handsome granite building. Dedham is a favorite place of residence for business men of Boston.

DEDICATION, in literature, the address of a book, or any literary work, to a person or party; *vide* Shakespeare's note to the right honorable Henry Wriothesly prefaced to *Venus and Adonis*. The custom is as old as literature, and doubtless originated in a desire to win the favor of some powerful patron. Occasionally may be found such a dedication as "To My Mother," or "To My Wife," but usually they are to public persons. Of late years the custom has to a great extent fallen into disuse, as not accordant with the independent spirit of our times.

DEEMS, CHARLES F., D.D., b. Baltimore, 1820; a graduate of Dickinson college 1839, and not long afterwards agent in North Carolina for the American Bible society. In 1840, he accepted the professorship of logic and rhetoric in the university of that state. In 1846, he was a Methodist preacher at New Berne, and delegate to the general conference. He was for five years principal of the Gainsboro college for women; he was presiding elder of the Wilmington and New Berne districts 1853 to 1865. In 1865, he went to New York, where he was employed in journalism, and took great interest in the founding of the "Church of the Strangers" (undenominational), of which he became and still remains pastor, with great success in a peculiar field. He has published *Annals of Southern Methodism*; *Life of Jesus*; *The Home Altar*; etc.

DEEP BOTTOM, on the n. side of James river, 12 m. by land and 20 by water below Richmond, near the battle-ground of Malvern hill. Several important actions were fought near this point in 1864, generally resulting favorably to the unionists.

DEEP RIVER, a tributary of Cape Fear river, North Carolina, rising in Guilford co., and running through Randolph and Chatham counties to join the Haw. Its length is about 120 m., and it is navigable as far as the coal-mines. The coal-beds in its valley have been long known, but little worked. Their productive area is more than 40 sq.m., and the total deposit estimated at 240,000,000 tons. The coal is in part highly bituminous, in part semi-bituminous, in part anthracite; all good. In places it is metamorphosed into graphite. Iron and copper ores are found near the coal.

DEERFIELD, a t. on the Connecticut river, in Franklin co., Mass., on the Connecticut River railroad, 90 m. w. by n. from Boston; pop. '70, 3,632. The village is regularly built and well shaded. There is a bridge over the Deerfield river, and some hills near by give extended and beautiful views. The place, or rather the vicinity, was settled in 1670, and five years later was the scene of an Indian massacre in which capt. Lathrop and 84 men were caught in ambuscade and 76 of them killed, the captain included. In the winter of 1704, the French and Indians fell upon Deerfield, burned all except the church and one house, killed 36 people, and carried the remainder, 108, into captivity. They were hurried off towards Canada, but many were killed or died on the way. The survivors were liberated in 1706, but a daughter of Mr. Williams, the minister, refused her liberty, and married an Indian chief.

DEER GRASS, plants of the order *melastomaceæ*, eight species of which are found in the United States. The flowers are conspicuous and showy, having bright purple petals. It is sometimes called the "meadow beauty."

DEER ISLE, a t. in Hancock co., Me., 130 m. from Portland, embracing Great and Little Deer and other islands, and having important fisheries, especially of lobsters. Pop. '70, 3,414.

DEER LODGE, a co. in n.w. Montana, bordering on British America; 15,300 sq.m.; pop. '70, 4,367. It is the richest mining section in the territory, and is also well adapted to grazing. Co. seat, Deer Lodge.

DE FACTO, a Latin phrase much used in English to express "in reality," or possession. A king *de facto* is one actually ruling, although the place may rightfully belong to another, who therefore is king *de jure*.

DEFFAND, MARIA DE VICHY-CHAMROND, Marquise du, 1697-1780; a leader in the fashionable literary society of Paris during the greater part of the 18th century. She was born of a noble family in Burgundy, and educated in a convent in Paris, and soon developed the cynical and skeptical turn of mind which so well suited the part she was afterwards to fill in the philosophical circles of the capital. At the age of 21, her parents married her to the marquis du Deffand, without consulting her inclinations. The union was unhappy, and a separation soon followed. Young and beautiful, she did not, according to the common belief, keep herself uncontaminated by the abounding vices of the age, and it was said that she was for a time the mistress of the regent. A reconciliation with her husband was made, but of short duration. Without heart and without enthusiasm, she was incapable of any strong attachment; but her intelligence, her cynicism, and her *esprit*, made her the center of attraction to a circle which included nearly all the famous philosophers and literary men of Paris, besides not a few distinguished visitors from abroad. In 1752, she became blind, and took up her abode in apartments in the convent of St. Joseph, her rooms having a separate entrance from the street. This became the frequent resort of such men as Choiseul, Boufflers, Montesquieu, Voltaire, D'Alembert, David Hume, and Horace Walpole. In 1764, the society was divided into two parties by the defection of her companion, Mlle. de L'Espinasse, who took with her D'Alembert and several others. Madame Deffand had most affinity of nature with Walpole, who made several visits to Paris for the purpose of enjoying her society, and who maintained a close and interesting correspondence with her for 18 years. Of her innumerable witty sayings, the best known is her remark on the cardinal de Polignac's account of St. Denis' miraculous walk of two miles with his decapitated head in his hands: "It is only the first step that costs."

DEFIANCE, a co. in n.w. Ohio, on the Indiana border, intersected by the Miami canal, and the Toledo, Wabash and Western railroad; 414 sq.m.; pop. '70, 15,719. The surface is level and timber is abundant. Chief productions, wheat, corn, oats, butter, wool, tobacco, etc. Co. seat, Defiance.

DEFIANCE, a village and seat of justice of Defiance co., Ohio, on the Maumee river, at the junction of the Auglaise, 50 m. n.w. of Toledo, with which it is connected by rail; pop. '70, 2,750. There are several flouring mills and other important manufacturing establishments.

DE FOREST, JOHN WILLIAM, b. Conn., 1826. While yet young, he passed several years in Europe and western Asia. In the war of the rebellion he served as captain of volunteers, and was promoted to major. For a time he was commander of what was known as a "Freedman's bureau district." Among his books are *Oriental Sketches*; *European Acquaintances*; *Seacliff*; *The Wetherel Affair*; *Miss Ravenel*; *Overland*; and *Kate Beaumont*.

DEFREGGER, FRANZ, an Austrian painter; b. 1855, at Stronach, in the Tyrol. He gave early evidence of talent, but had no opportunity for instruction till 1860; when, after studying drawing with the sculptor Stolz at Junsbrack, he was admitted to the Munich academy of fine arts, and afterwards, 1863-65, pursued his studies in Paris. In 1867, he began a series of paintings illustrating scenes of everyday life in the Tyrol that have justly made him famous. Among the best known are: "The Forester Returning Home for the Last Time;" "Wrestlers in the Tyrol;" "The Poachers;" "Dancing on the Alin;" and "The Last Call of 1809." He stands high among living genre painters.

DEFTER-DAR, a title of the Turkish minister of finance, who has a seat in the divan and disburses the public money. The title may be translated "book-keeper."

DEGER, ERNST, b. 1809; a German painter who studied at Düsseldorf under Von Schadow. He painted the frescos in the church of Apollonaris on the Rhine; on the completion of which William IV. employed him to adorn the chapel in the castle of Stolzenfels. He has held for a number of years a professorship in the academy of fine arts in Munich.

DE GREY, Earl. See RIPON, MARQUIS OF.

DE HAAS, MAURICE, F.H., a Dutch painter, b. Rotterdam, 1830, a pupil of Lewis Meyer. In 1859, he emigrated to New York, where he soon gained a high reputation. Marine views are his *forte*. His best known American picture is "Farragut Passing the Forts."

DEHRA DUN, a district in British India in the Meerat division of the lieutenant-governorship of the north-western provinces, between 29° 57' and 30° 59' n., and 77° 31' and 78° 23' east. The valley (dun) of the Dehra has an area of 673 sq. m., in the form of a parallelogram running 45 m. from n.w. to s.e., and 15 m. broad. The Ganges bounds the valley on the e. and the Jumna on the west. The agricultural products are tea, rice, oil seeds, millet, garden crops, etc.; pop. '72, 116,953, nearly all Hindus. (From *Encyclopædia Britannica*.)

DEISM, or THEISM (*ante*), is a term not so much used in religious distinction now as it was a century ago. Those who embrace the views of God which that term implies now generally take name of freethinkers, rationalists, or liberals. They differ very widely from each other in many particulars, agreeing only in their belief in the existence of God, and in their denial that the Bible is an infallible revelation of his will. They are often called "infidels" by way of reproach. Thomas Paine, who wrote in the latter part of the 18th c., was the most eminent champion of deism in the United States. See RATIONALISM, *ante*.

DEJANIRA, or DEIANEIRA, in Greek mythology, daughter of a king of Ætolia, and wife of Hercules. She soaked her husband's tunic in the blood of Nessus, the centaur, and Hercules was thereby poisoned. He could not endure the agony, and threw himself on a funeral pile, and perished.

DE JURE. See DE FACTO.

DE KALB, a co. in n.e. Alabama, on the Georgia border, intersected by the Alabama and Chattanooga railroad; 720 sq. m.; pop. '70, 7,126—470 colored. The productions are wheat, corn, etc. There is good water-power, and much fine scenery. Co. seat, Lebanon.

DE KALB, a co. in n.w. Georgia, on the Chattahoochee, traversed by the Atlanta and Richmond, and the Georgia railroad; 291 sq. m.; pop. '70, 10,014—2,662 colored. Surface elevated and uneven, with very rich soil in the valley of the river. Productions, wheat, corn, cotton, etc. Iron and granite are abundant, and there are chalybeate springs. Stone mountain in the e. part of the co. is one of the curiosities of the state. Co. seat, Decatur.

DE KALB, a co. in n. Illinois, crossed by the Chicago and Northwestern, and other railroads; 648 sq. m.; pop. '70, 23,265. It has a rolling surface and fertile soil, mostly of prairie, producing wheat, corn, oats, barley, flax, wool, butter, cheese, etc. Co. seat, Sycamore.

DE KALB, a co. in n.e. Indiana, on the Ohio border, drained by the St. Joseph's and smaller rivers, and intersected by several railroads; 346 sq. m.; pop. '70, 17,167; in '80, 20,163. The surface is undulating and the soil fertile. Agriculture is the main business. Co. seat, Auburn.

DE KALB, a co. in n.w. Missouri, drained by tributaries of the Platte, reached by the St. Louis and Denver railroad; 441 sq. m.; pop. '70, 9,858—122 colored. The surface is level and the soil fertile; productions, agricultural. Co. seat, Maysville.

DE KALB, a co. in n. Tennessee; 300 sq. m.; pop. '70, 11,425—1104 colored. The surface is diversified and the soil fruitful; productions, agricultural. Co. seat, Smithville.

DE KALB, JOHN, Baron, 1732-80; a native of Alsace, and a gen. in the American army of the revolution. He was sent, in 1762, by France to the American colonies as her unavowed agent. He was in the French army when he engaged to serve in the cause of the Americans. The next year he accompanied Lafayette to America, was by

congress made maj.gen., and was in the army under Washington. He served in New Jersey and Maryland; was second in command under Gates; led the Maryland and Delaware troops in the battle of Camden, where he received eleven wounds, and died three days afterwards. His memory is held in honor.

DE KOVEN, JAMES, D.D., 1831-79; b. Conn.; an Episcopal clergyman and bishop; graduated at Columbia college, and at the general theological seminary of New York in 1854. He was rector in Wisconsin for five years. In 1875, he was elected bishop of Illinois, but in consequence of his extreme high-church views he was not consecrated. In 1878, he was chosen assistant-rector of Trinity church, New York, but declined to leave his work as dean of Racine (Wis.) college. He declined a call to Philadelphia also for the same reason. De Koven was especially conspicuous in the debates at the national Episcopal convention in New York in 1874. His whole course showed great religious fervor and earnestness.

DELAFIELD, RICHARD, 1798-1873; b. N. Y., graduate of West Point. In 1864, he was chief of engineers, with the rank of brig.gen. He was employed on the northern boundary surveys, in building fortifications, and river and harbor improvements, and in making roads and canals. He was president of the military commission to the Crimea in 1854-56. When the rebellion began, he was on the staff of the governor of New York, and afterwards had charge of the engineering bureau of the war department; retiring, 1866, with the rank of brevet maj.gen. He was a regent of the Smithsonian institution.

DE LANCEY, JAMES, 1703-60; b. N. Y.; son of a French Huguenot; graduated at Cambridge, England. He was for many years chief-justice of the supreme court of New York, and for several years lieutenant-governor of the colony. He was one of the founders of Columbia college.

DE LANCEY, WILLIAM HEATHCOTE, D.D., LL.D., D.C.L., 1797-1865; b. N. Y., graduate of Yale; student of theology under bishop Hobart. He was assistant to bishop White, of Philadelphia, and secretary to the house of bishops in the general convention of the Episcopal church in the United States. In 1828, he was provost of the university of Pennsylvania, and in 1833 assistant minister in a church in Philadelphia. In 1838, he was chosen bishop of the western diocese of New York. In 1852, he was a delegate from the Episcopal bishops of the United States to England, and was honored with the degree of D.C.L. from Oxford university.

DELANE, WILLIAM AUGUSTUS FREDERICK, 1793-1857; an English journalist for many years the financial editor and manager of the *London Times*. He was the father of John Thaddeus (q.v., *ante*), who became the editor of that journal.

DE LA RAME', LOUISA (Ouida, pseud.) b. 1840, in Bury St. Edmunds, England, of French descent on the father's side. When a child she was taken to London, and at a precocious age began to write for periodicals. While yet under age, she commenced her first novel in *Colburn's New Monthly Magazine*. The work is now known as *Held in Bondage*. Novel after novel followed in rapid succession, until she was known far and wide as one of the most prolific authors in the world. The signature "Ouida" is her own pronunciation when a child of her name, Louisa. She resides near Florence, Italy. Her writings, though widely popular, and showing much facility and some skill, are, as a whole, not held in high estimate by thoughtful critics.

DE LA RIVE, AUGUSTE, 1801-73; a Swiss physicist who devoted much attention to researches in electricity. At the age of 22, he was appointed to the chair of natural philosophy in the Geneva academy. One of his specialties was an endeavor to determine the heat of the earth's crust, for which purpose he took advantage of an artesian well of 700 ft. deep, and his observations were adopted by Poisson as the basis of his calculations. The name of De La Rive is associated with original discoveries in connection with magnetism, electric dynamics, the connection of magnetism with electricity, the properties of the voltaic arc, and the passage of electricity through extremely rarefied media. He published a complete treatise on electricity, which is accepted as a standard work. In 1864, he received the highest honor open to the scientific men of Europe in his nomination as one of the eight foreign associates of the French academy.

DE LA RUE, WARREN, PH.D., b. island of Guernsey, 1815; educated in Paris; an inventor. Among his inventions are processes for utilizing earth-oils, machinery for printing surface-coloring paper, for pasting cards, and for folding envelopes. He has been very successful in applying photography to the recording of celestial phenomena, particularly in eclipses of the sun.

DELAUNAY, CHARLES EUGÈNE, 1816-72; a French astronomer, educated at the polytechnic school, the first one to whom the Laplace prize was awarded. He became a professor of mechanics, and in 1855, a member of the academy. He was chosen a member of the royal astronomical society of London in 1869. The next year he was the successor of Leverrier in the Paris observatory, and a year later received the professorship of astronomy and geology in the polytechnic school. He published a number of valuable treatises.

DELAWARE (*ante*), the "diamond state," popularly so-called from its size and shape, was named after lord De La Warr, an early colonial governor of Virginia, who sailed up the bay in 1610, though Henry Hudson had preceded him by nearly a year. In 1630, the Dutch planted a small colony near cape Henlopen, but the Indians drove them out three years later. In 1637, there came a colony of Swedes and Finlanders, who bought land and built a fort on Christiana creek, named the country New Sweden, and a little later put up a fort on the island of Tinicum, only a few miles below Philadelphia. This was considered by the Dutch of New Amsterdam an invasion of their territory, and they set up fort Casimir, near the site of the present New Castle, only 5 m. from the Swedish fort. The Swedes took fort Casimir in 1654, but the next year the Dutch seized the whole country, and sent to England all the colonists who refused allegiance to Holland. When New York came under the English government, in 1664, the Delaware settlements were claimed for the duke of York, and also by lord Baltimore for Maryland. But William Penn, soon after he settled Pennsylvania, purchased the duke's right, and effected a compromise with Baltimore, so as to add the Delaware settlements to Pennsylvania; and for 20 years they were governed as a part of that state, under the name of the "territories, or three lower counties on the Delaware," each county sending six representatives to the general assembly. In 1703, Delaware set up for herself so far as to establish a separate legislature, but the rule of the Pennsylvania governor was conceded on the ground of proprietary rights, until the period of the revolution, when the state became independent. While the other colonies suffered severely by Indian forays and wars, Delaware was almost exempt, being in a corner by the sea, out of the path of such trouble. Her men were found, however, on the side of England in the French war; and in the revolution, the soldiers of this little colony were foremost in good service, and the "Blue Hen's chickens," as the Delaware volunteers were called, were among the best and bravest of Washington's troops. The post-revolutionary history of Delaware has been uneventful.

Next to Rhode Island, Delaware is the smallest of the United States, having only 2,120 sq. miles. Texas alone would make 130 Delawares. The surroundings are Maryland on the s. and w.; Pennsylvania on the n., and New Jersey, Delaware bay, and the ocean on the east. There are no mountains in the state, and, except in the northern portion, the surface is uniformly level, and generally sandy. Of the numerous small streams, only Christiana creek is available for large vessels, and that only to Wilmington, the most important harbor in the state. The only other harbors are Lewes and New Castle. There are some swampy districts, but in the main the soil is firm, warm, and fertile, and the climate equable and salubrious, though there is occasional malarial trouble around the wet regions. Wild animals are almost extinct; but the shores of the bay are the resort of wild geese, teal, and ducks. The peach and apple crop, and small berries, are the great staples of the state. There are more than 5,550,000 peach trees, occupying 55,000 acres of the richest soil. The shipment of peaches by the Delaware railroad was, in 1870, 2,707 car-loads, and in 1877, 4,248 car-loads, of 500 baskets to a car—or 2,124,000 baskets for the last year named; besides this, 20 per ct. of the crop is shipped by boats. The crop is exceedingly variable, some years falling off 60 to 80 per cent. Large quantities of strawberries, raspberries, and blackberries also are sent to market, amounting to more than 5,000,000 quarts in the brief season of six or seven weeks. There is some foreign commerce direct from Wilmington, but such trade is generally through Baltimore or some northern port. Wilmington has a coast line of steamers to New York. Dover is the capital of the state; Wilmington, at the junction of the Brandywine and Christiana creeks, where they empty into the Delaware, is the largest and most important city; and New Castle and Smyrna are the next largest places. The townships bear the name of "hundreds," as anciently in England. The state is divided into three counties, Kent, Newcastle, and Sussex, each having the same numerical representation in the legislature. This may have been equitable at first, but it is so no longer; since the county of Newcastle, at the northern end of the state, of which Wilmington is the capital, contains a larger population than both the other counties put together, and is at the same time more enterprising, intelligent, and prosperous than they. As the two smaller counties are not inclined to surrender their political advantages, controlling, as they do, the legislature of the state by a minority of the popular vote, it is not easy to see how this wrong is to be righted. The population of the counties by the census of 1870 was—Kent, 29,804; Sussex, 31,696; Newcastle, 63,515; majority of the latter over the two former, 2,015, which is likely to be largely increased by the census of 1880. Of the total population of the state in 1870, 102,221 were whites, and 22,794 colored; 115,879 native, and 9,135 foreign born; 62,628 males, and 62,387 females. There were 22,900 families, and 22,577 dwellings. It also appears from the census of 1870, that of the population of the state 10 years old and over, 15,973 were engaged in agriculture, 11,389 in professional and personal occupations, 3,437 in trade and transportation, and 9,514 in manufactures and mining. The number of acres of improved land was 698,115; bushels of wheat raised, 895,477; of rye, 10,222. Other agricultural productions, such as oats, barley, buckwheat, sweet potatoes, flax, hay, butter, etc., were in fair proportion to the above staples. The farms of the state were valued at \$46,712,870. The number of manufacturing establishments was 800, with 164 steam engines of 4,313 horse power, and 234 water wheels of 4,220 horse power; work people employed, 9,710,

of whom 1200 were females; capital invested, \$10,839,093; wages paid, nearly \$4,000,000; value of raw materials, over \$10,000,000; of products, nearly \$17,000,000. Chesapeake and Delaware bays are connected by a canal large enough for coasting vessels. There are in the state 11 national banks, with capital exceeding \$1,500,000; also several state banks, with considerably less capital, and a number of insurance companies. There are several iron mines in Newcastle county, bog iron ore is found in the swamps, and shell marl is abundant. The debt of the state in 1872 was \$1,325,000, mainly incurred during the rebellion. Popular education has been much neglected. Of the total population in 1870 (125,015), 11,280 whites, and 11,820 blacks, 10 years old and upwards, could not write; while 19,680, whites and blacks, could not read. The state has a fund of \$452,419 for the support of free schools. There is no state or county superintendence, the school districts acting severally, according to their pleasure in maintaining schools. The advantages of the schools are confined to the white children, the state making no provision for the instruction of colored children. There is, however, a charitable organization which supported 20 schools for colored children in 1871. According to the census of 1870, 19,965 children attended school during the year. There were 326 schools of all kinds, with 107 male, and 281 female teachers. In the city of Wilmington, at the northern end of the state, the interests of education are better cared for than elsewhere, and if Newcastle county were represented in the legislature in proportion to her population, the whole tone of legislation on this subject would be very speedily changed. The Delaware state normal university, in Wilmington, the charter of which was repealed in 1871 for political reasons, had, in 1871-'72, 11 instructors and 221 students. The Wesleyan female college in the same place is prosperous; and Delaware college in Newark, open to both sexes, in 1872 had 10 instructors and 105 students, with a library of 6,000 volumes. To this institution has been given the congressional grant of 90,000 acres of the public lands for an agricultural department; which has been duly organized. The number of libraries in the state in 1870 was 473, containing 183,423 volumes. Of these 221 with 91,148 volumes, were private. The number of church organizations was 267, of church edifices, 252; the Methodists (173 churches), Presbyterians (32 churches), and Episcopalians (29 churches), being the most numerous denominations. The number of newspapers and periodicals in 1870 was 17, with an aggregate circulation of about 21,000. The railroads of the state are: Delaware, from Delaware Junction to Maryland line, 84 m.; Junction and Delaware Breakwater, from Harrington to Lewes, 40 m.; Smyrna and Delaware Bay, from Pierson's Grove to Murray's Junction, 20 m.; Delaware Western, from Wilmington to Lundonburg, Pa., 20 m.; Breakwater, and Frankford and Georgetown, Shelbyville to Georgetown, 19 miles.

The constitution gives the franchise to white male citizens (to colored also since the 15th amendment to the federal constitution) who have lived a year in the state and a month in the county, and paid certain taxes. Elections and legislative sessions are held biennially. There is a senate of nine members, three from each county, and a house of representatives of 21—seven from each county, chosen for two years. Senators must be 27 years of age or over, and be freeholders in their own counties; representatives must be 24 or over, and both must have been citizens of the state three years, and of the county one year to be eligible to seats in the legislature. Their pay is \$3 per day and mileage. The governor must be 30 years old, six years a resident, and 12 years a citizen of the United States; he is not eligible for immediate re-election. There are five judges, one of whom is chancellor, and one the chief justice. Ministers of the gospel are not permitted to hold any civil office. The real property, stocks, plate, etc., owned by a woman at her marriage are not subject to the husband's control or liable for his debts; but a wife cannot make a conveyance without the husband's consent. Treason, murder in the first degree, arson of a dwelling, rape, and burglary at night with intent to commit high crimes, are punishable with death. The whipping-post is in use for petty offenders. Adultery by a wife, or impotence on either side, are causes for divorce; and divorce may be granted for cruelty, abandonment, etc. The state has the honor of being the first to ratify the federal constitution, Dec. 8, 1807. Though a slaveholding state, she did not join in the rebellion of 1860. Many of her people were in strong sympathy with the confederate cause, and some of them—how large a number is unknown—privately joined the rebel forces. On the other hand, the state furnished the union army seven regiments of infantry, a battalion of cavalry, and two or three batteries of artillery—in all, about 10,000 men. After the rebellion was subdued, the state, in conformity with the conditions of reconstruction, reluctantly acquiesced in the freedom of her slaves, and permitted negroes to vote on the same terms with white men. Until 1828, the presidential electors of Delaware were chosen by the legislature; since then, they have been elected by the popular vote. In 1812, 1816, and 1820, Delaware had 2 representatives in congress and therefore cast 4 electoral votes; but at all other times, having but one such representative, she has had but three electoral votes. The votes of the state for president and vice-president at the several elections have been as follows: 1789, Washington and Jay; 1792, Washington and John Adams; 1796, John Adams and Thomas Pinckney; 1800, John Adams and Charles C. Pinckney; 1804, Charles C. Pinckney and Rufus King; 1808, Charles C. Pinckney and Rufus King; 1812, DeWitt Clinton and Jared Ingersoll; 1816, Rufus King and Robert G. Harper (one vacancy); in 1820, Monroe and Daniel Rodney; 1824, for president, William H. Craw-

ford 2, John Q. Adams 1; vice-president, Clay 2, Calhoun 1; in 1828, John Q. Adams and Richard Rush; 1832, Clay and John Sergeant; 1836, Harrison and Francis Granger; 1840, Harrison and Tyler; 1844, Clay and Frelinghuysen; 1848, Taylor and Fillmore; 1852, Pierce and William R. King; 1856, Buchanan and John C. Breckenridge; 1860, John C. Breckenridge and Joseph Lane; 1864, no vote; 1868, Horation Seymour and Francis P. Blair; 1872, Grant and Wilson; 1876, Tilden and Hendricks. Delaware has furnished of federal officers, two secretaries of state, one of the treasury, and one attorney-general. (For latest statistics, see Appendix.)

DELAWARE, a co. in e. Indiana, on White river, crossed by four railroads; 400 sq.m.; pop. '70, 19,030. The surface is level, and the soil fertile. Much of the co. is still covered with forests. Productions, agricultural. Co. seat, Muncie.

DELAWARE, a co. in e. Iowa, crossed by two railroads; 576 sq.m.; pop. '75, 16,893. The surface is hilly and well supplied with water, although there is no large stream. Productions, wheat, corn, oats, barley, cheese, butter, etc. Co. seat, Delhi.

DELAWARE, a co. in s.e. New York, bounded n.w. by the Susquehanna, intersected by the Delaware river, and reached by the Erie and the Delaware and Susquehanna railroads; 1550 sq.m.; pop. '80, 42,660. The surface is hilly, but the lowlands are exceedingly fertile. Lumber, which is floated or boated down the river, is one of the leading industries. The other chief productions are butter, maple sugar, hops, corn, oats, buckwheat, etc. Co. seat, Delhi.

DELAWARE, a co. in central Ohio, on the Scioto and Olentangy rivers, crossed by two railroads; 478 sq.m.; pop. '70, 25,175. Surface even; soil fertile. Productions, wheat, corn, oats, butter, wool, maple-sugar, flax, etc. Co. seat, Delaware.

DELAWARE, a co. in s.e. Pennsylvania, on the Delaware river, below Philadelphia, crossed by several railroads; 108 sq.m.; pop. '70, 39,403. Its productions are mainly vegetables, fruits, milk, butter, etc., for the Philadelphia market. Water-power is abundant. In this section the original Swedish settlements were made. Co. seat, Media.

DELAWARE, a city in Delaware co., Ohio, on the Olentangy river; pop. '70, 5,641. It is pleasantly situated and neatly built; it is a place of considerable trade, and has a number of manufactories. A medicinal spring is one of the attractions. It is the seat of the Ohio Wesleyan university, organized 1842, and of the Ohio Wesleyan female college, begun 1863. There is a theological department connected with the university.

DELAWARE INDIANS (INDIANS, *ante*), a tribe of American Indians once very important, dwelling in the region of the Delaware river, in Pennsylvania and New York. They were called Lenno Lenape, from "Lenappi," a term for men in general, applied by themselves to themselves. (Delaware is not an Indian word, as some think, but from the name of lord de la Warr, one of the early governors of the colony of Virginia.) The Delawares were among the earliest to become friendly and to trade with the Dutch settlers of New York, and were generally on good terms with the whites. After destroying one Swedish settlement, they became friendly with that people also, and the Lutherans made some efforts to Christianize them. In 1741, the Moravians established missions near Bethlehem and Nazareth, Pa. For a long period the Iroquois held the Delawares in great contempt, stigmatizing them as women; but they fought well enough on the side of the French at Braddock's defeat and elsewhere. Long afterwards, a number of the tribes, smarting under a sense of wrong in certain treaties with the whites, took part with Pontiac in the Indian war in the north-west, and were among those who besieged Detroit in 1763. They were defeated in the same year, and their chief was killed. Not long afterwards the whites destroyed the Delaware villages on the Susquehanna. Peace was made at fort Pitt in 1765, and the tribe began at once to emigrate to the west, so that in 1768 there were none of them east of the Alleghanies. The Moravian missionaries went with their flocks, and Christian Indians rapidly increased along the Ohio; but the hostile feeling prevailed until the battle of Pleasant Point in 1774, when they were utterly scattered. In the war of the revolution most of the Delawares took the English side, although a part of the nation made a treaty with congress. The Christian Indians had settled on the Muskingum in 1772, forming three towns, one of which was of Delawares only. They took no part in the war, but attended to their farming until the English captured them, 1781, and removed them to Sandusky. A part of those returned to save their crops, but were attacked by the Americans, who murdered 90 of them. The remainder fled to Canada. These, with others, subsequently formed the town of Fairfield on the Thames; only a few members of the tribe returning to the Muskingum country. There were still many hostile, and these had a strong band of warriors in the defeat of St. Clair in 1791. Peace was made after Wayne's victory four years later, and thenceforward from time to time the tribe disposed of their lands in Ohio, and nearly all remained in Canada. In the war of 1812, they refused to join Tecumseh, and remained friendly to the United States. Even after this the Americans destroyed their town in Canada. In 1818, the Delawares, numbering about 1800, ceded all their lands to the United States, and removed to Missouri territory. By treaty in 1829, the mass of the nation, only 1000, were settled on the Kansas and the Missouri. Here they suffered from the attacks of the Sioux and other wild tribes and the depreda-

tions of thieving white men. In the Kansas troubles they took no part. In the civil war they sent 170 men to the union army, out of a total of 200 able-bodied warriors. Being disturbed by the Pacific railroad, they sold their lands and moved to a location on the Verdigris and Cane rivers. In 1866, a special treaty permitted them to become citizens of the United States, and they elected so to do, since which time they have not been regarded as a tribe. Their language was among the best known of aboriginal tongues, and a number of educational and other works have been published in it.

DELAWARES. See INDIANS.

DELAWARE WATER-GAP, a pleasure resort on the Delaware river, reached by the Delaware and Lackawanna railroad, 92 m. w. of New York. The river here makes its way through the mountains in a narrow gorge, whose rocky sides rise almost 1200 ft. above the water; and the surrounding scenery is very fine.

DE LA WARR, or DELAWARE, THOMAS WEST, Lord, d. 1618. He succeeded his father as baron Delaware, 1602; became governor of Virginia, 1609; and landed at Jamestown the next year, after a voyage of fifteen weeks. He was an able and energetic officer, and infused new life into the colony, which had been badly managed. He founded a colony at the mouth of James river, and built two forts, which he named Henry and Charles, in honor of the king's sons. On a voyage to the West Indies for the benefit of his health, he was driven by a storm into the river which now bears his name; it was called by the natives Chickohocki. In 1611, he returned to England, but in 1618, in consequence of the tyranny of Argall, he was urgently besought to return. He complied, but died on the voyage. He published *A True Relation of the Counsell of Virginia*.

DELEGATE, the title given to members of the first continental congress, 1774. Representatives in the United States congress from the territories are still designated by this term. They have seats, and the right of discussion, but have no vote. The term is in common use to denote the members of partisan and religious conventions, and indeed of almost all associate bodies representing a constituency.

DELEGATION, in civil law, an act by which a debtor, with the consent of a creditor, procures another debtor in his place, and is himself relieved from the charge. At common law, it is the transfer of property from one person to another. Any person may delegate to another authority to act for him in a matter which is lawful and otherwise capable of being delegated. But the one to whom a power is delegated cannot himself delegate that power to another, since the dependence of the party originally delegating was upon him only, and not upon a third person.

DELESCLUZE, LOUIS CHARLES, 1809-71; a French politician, journalist, and agitator, who took a prominent part in revolutionary conspiracies in the time of Louis Philippe, in those of the republic of 1848, and of the empire. He was imprisoned for one of his articles in the newspapers, and was once transported to Cayenne. In 1868, he started the *Réveil* newspaper, one of the most radical of prints. He was a conspicuously desperate and reckless leader of the commune during the siege of Paris. He was killed on a street barricade, whether by accident or design is not known.

DELFI'CO, MELCHIORRE, 1744-1835; an Italian writer on political economy. His first publication was a vindication of marriage against the loose views then prevalent. Another work, addressed to the king, had the effect of repealing vexatious restriction on the sale and exportation of agricultural produce. Other reforms of importance were due to his writings. During Joseph Bonaparte's brief reign he was councillor of state, and was employed in reconstructing the judiciary. When Ferdinand was restored he was made president of the commission of archives. He left a number of important critical works.

DELGA'DA, or PONTA DELGADA, a city in St. Michael, one of the Azores, on the s. side of the island; 37° 45' n., and 20° 40' w.; pop. 15,885. It has a large trade in fruit, grain, etc.

DELIA, a festival of Apollo held in Delos. It included athletic and musical contests, for which the prize was a branch of the sacred palm. The Athenians, who ascribed its establishment to Theseus, took especial pains to maintain the splendor of this festival.

DELISLE. See LISLE, GUILLAUME DE.

DE'LITZSCH, FRANZ, b. 1813; a German theologian, educated in Leipsic; in 1846, professor of theology at Rostock. In 1850, he became one of the strongest supporters of what is called the Erlangen school, or the strictest orthodox theology. He has written much on theology, and on oriental philology. In 1863, in company with Kiel, he began the preparation of a complete commentary on the Old Testament. To profound learning he adds critical acumen.

DE'LIUS, NIKOLAUS, b. Bremen, 1813; a graduate of Bonn, and since 1855 has held the professorship of Sanscrit, and of Provençal and English literature, in that university. He has published in German a critical edition of Shakespeare.

DEL NORTE, a co. in n.w. California, on the Oregon border and the Pacific ocean, intersected by the Klamath river; 1440 sq.m.; pop. '70, 2,022. The surface is

mountainous, and mostly covered with timber. Gold and copper are plentiful. Agriculture is the chief business. Co. seat, Crescent city, on the Pacific.

DE LOUTHERBOURG, PHILIP JAMES, 1740-1812; of a Polish family, but b. at Strasburg, where he was naturalized, educated in the university, and intended for the ministry. His inclinations, however, led him to painting, and he studied in Paris under Van Loo. He speedily made a name and won high rank. He was elected to the French academy while under the required age. He had some eccentricities, which constantly appeared in his work, especially in his titles, as, when he painted a group of asses he called them "Father and Mother," "Little Fanfan," "Aunt and Uncle from Brittany, Cousin Germain," and the "Perruquier of all the Family." He traveled in Switzerland, Germany, and Italy, and became celebrated more for mechanical construction than for painting. One of his mechanical contrivances was a model theater, where he cleverly represented the moon and stars by lights, and running water by sheets of metal and gauze with loose threads of silver. In London, he was employed by Garrick to superintend the mechanism and scene-painting of Drury Lane, which he did with remarkable success, making a new era in the adjuncts of the stage. The Christmas pantomime of 1781 introduced these novelties, to the surprise and delight not only of the public, but also of artists. The green grass actually became russet, the moon rose and lighted the edges of the passing clouds, and all England was captivated by effects which we now scarcely notice. A still greater triumph was in his mechanical representation of the rise, progress, and result of a storm at sea—the one which had just destroyed a great East Indiaman. The same show gave "The Fallen Angels raising the Palace in Pandemonium." At the same time his painting went on, and he produced "Lord Howe's Victory off Ushant," and other large pictures for the Greenwich hospital gallery. His restless spirit led him to dabble in magic, and he joined the famous Cagliostro for a time. He sought the philosopher's stone, and found a reason for his ill-success in the fact that a relative stole in upon him and broke his crucible at the critical moment.

DELPHINIA, a festival of Apollo, held annually on the 7th of April, at Athens, where the god was styled Delphinios. All that is known is that a number of girls carrying branches went in procession to the temple seeking to propitiate Apollo, it is supposed because of his influence over the sea, as this was about the time of the yearly opening of navigation. (From *Encyclopedia Britannica*.)

DELTA, a term applied to the land lying between the two or more mouths of a river; generally of triangular form, like the Greek letter Δ (delta). They are usually constantly increasing alluvial deposits pushed out into the sea by the action of the rivers. That of the Ganges is the largest, its base on the ocean being 200 m., and its sides about equal. The deltas of the Nile and the Mississippi are also very large.

DELTA, a co. in Michigan, on lake Michigan and Green bay, indented by two other bays, intersected by a branch of the Chicago and Northwestern railroad; 1500 sq.m.; pop. '74, 4,741. It is hilly, well wooded, and contains abundance of sandstone and limestone. Co. seat, Escanaba.

DELTA, a co. in n.e. Texas, formed since 1870, lying on the forks of Sulphur river, about 250 sq.m. The soil is good, producing cotton, corn, etc. Co. seat, Cooper.

DULUC, JEAN ANDRÉ, 1727-1817; a native of Geneva, Switzerland, geologist and meteorologist. He was a merchant until nearly 50 years of age; but within that time, assisted by his brother, he collected a fine museum of mineralogy and natural history. After some political reverses he removed to England in 1773; where he was made a fellow of the royal society, and appointed reader to queen Charlotte, a position held by him for 44 years, and affording him ample time for study. Later in life he traveled in the principal European countries, and made a geological tour of England. He lived at the time when modern science was first seriously questioning the literal meaning of the six days of 24 hours each in the Mosaic account of creation; and he clung to the old idea, but was obliged to fall back upon a theory of wonderful volcanic action to account for the existence of the present continents.

DEMADES, a Grecian orator and demagogue of the 4th c. B.C.; a man of genius, but entirely unscrupulous, and ready to sell his political influence to the best customer. He was a favorite with Alexander, and for a bribe saved Demosthenes and other Athenian orators from vengeance. He was deprived of civil rights by the citizens of Athens, but was restored on the approach of Antipater, and sent to him with Phocion, as ambassador. Antipater had no difficulty in bribing him; but on a later occasion he found out his duplicity, and put him with his son to death.

DEMARCATIION, LINE OF, an imaginary line running due n. and s., 360 m. w. of the Azores, established by pope Alexander VI. in 1494. All new lands discovered e. of this line were to belong to Portugal; all on the w. to Spain.

DEMETRIUS I., POLIORCETES, King of Macedonia, son of Antigonus and Stratonice. At the age of 22, his father sent him against Ptolemy, who had invaded Syria. He was totally defeated near Gaza, but soon repaired the misfortune by a victory over Cilices. After other various successes, he led a fleet of 250 ships to Athens, and freed the people from the power of Cassander and Ptolemy, some time afterwards defeating Cassander

at Thermopylæ. In the next campaign, he completely destroyed Ptolemy's naval power. In 301 B.C., he was defeated at Ipsus, and the fickle Athenians, who had worshiped him as a god, now deserted and reviled him. The loss of his possessions in Asia recalled him from Greece, and he established himself on the throne of Macedonia by the murder of Alexander, the son of Cassander, 294 B.C. Afterwards he had a stormy reign, and was finally forsaken in battle by his troops and made a prisoner, dying in confinement.

DEME'TRIUS II., grandson of Demetrius Poliorcetes; king of Macedonia for ten years. Little is known of his reign. He offered a slight opposition to the two patriotic leagues, and wrested Bœotia from the Ætolians. He died 232 B.C.

DEME'TRIUS I., SOTER, King of Syria; sent to Rome as a hostage during the reign of Antiochus Epiphanes. He escaped from confinement, and established himself on the throne. He fell in battle against the usurper Balas about 150 B.C.

DEME'TRIUS II., NICATOR, son of Demetrius Soter, lived many years in exile, but with the assistance of Ptolemy Philometer, whose daughter he married, he regained the throne of Syria. He was soon expelled for cruelty and vices; and Antiochus, infant son of Alexander Balas, was made king instead. After ten years of captivity, Demetrius once more regained the throne; but his wife Cleopatra, indignant at his subsequent marriage with a daughter of the king of Parthia, caused him to be assassinated, 126 B.C.

DEME'TRIUS III., EUCERUS, called also Eugertes, and Philometer; king of Syria. He recovered a part of his Syrian dominions, and held his court at Damascus. He assisted the Jews against Alexander Jannæus. In attempting to dethrone his brother Philip he was defeated by the Arabs and Parthians, and taken prisoner. Mithridates, king of Parthia, kept him in confinement until his death.

DEME'TRIUS, a sculptor of Attica, supposed to have flourished about 440 B.C. He was so close an imitator of nature that he was censured for reproducing her imperfections.

DEME'TRIUS OF BYZANTIUM, a peripatetic philosopher, supposed to have been the man who dissuaded Cato from suicide. Some portions of his writings are said to have been found at Herculaneum.

DEME'TRIUS OF SUNIUM, a cynic philosopher, disciple and afterwards antagonist of Apollonius of Tyana. Caligula, being desirous of counting a philosopher among his sycophants, sent a large bribe to Demetrius, who refused it, saying, "if Caligula wishes to bribe me let him send me his crown." Vespasian banished him because of his bitter speech. Seneca observes that nature made him to show mankind how an exalted genius may live uncorrupted by the vices of the world.

DEMI-MONDE, the better class of courtesans in Paris and other cities, including a class whose reputation is a little above these, and yet not good enough to warrant their reception in strictly moral society. They are noticeable from the fact that the leaders among them have been for years the dictators of the fashions for women's dresses in Europe and America.

DEM'ING, HENRY C., 1815-72; b. Conn.; graduate of Yale, and of Harvard law-school; a lawyer and politician, who held a number of state offices. He served in the union army during the rebellion as a colonel of the 12th Connecticut volunteers, and mayor of New Orleans. In 1864, he was a member of congress from Connecticut.

DEMMIT, a co. in s.w. Texas, on the Neuces; 1050 sq.m.; pop. '70, 109. Timber and water are plenty; stock-raising is the only business.

DEMOCE'DES, b. 550 B.C.; a Greek physician. While on a visit to Sardis, he was seized by the Persians, and sent to the court of Darius, to whom he rendered such medical assistance that he was allowed to accompany a party of Persians on a secret mission to Greece. He managed to escape, or was rescued by his fellow-citizens. He married a daughter of the wrestler Nilo.

DEMOCRACY (*ante*). The definition of this term most widely accepted in the United States is embodied in the striking words of Abraham Lincoln: "A government of the people, by the people, for the people." This definition is fluctuating on account of the uncertain meaning of the word "people," which is generally used in a more or less restricted sense. Strictly speaking, it might be held to include every person in the jurisdiction, without distinction of age, sex, or class; but as a political term it is usually taken to mean only the great body of adult male citizens. In the days of slavery, by a mental reservation, negroes were generally excepted. Women and children, as well as idiots and criminals, are also excluded; but it is now insisted by a strong and growing party that the exclusion of women cannot be reconciled with the rational and consistent interpretation of the word democracy. The rights of this class are already so far recognized in some of the states that they are allowed to participate in the election of school officers, and to serve on school committees and boards of clarity. The tendency of the times is undoubtedly towards a broader interpretation of the democratic idea, though the movement in this direction meets with a stubborn resistance. The government of

the United States is called democratic, as also are the governments of the states composing the union; but they are only comparatively, not purely such. See SUFFRAGE, *ante*.

DEMOD'OCUS, a famous singer, who is represented by Homer as celebrating at the banquet of Alcinous the Greek heroes of the Trojan war. He also sang the loves of Venus and Mars. Some writers have represented him as a blind poet and musician of Corcyra.

DEMOGORGON, a mysterious and terrible being, referred to by the classical and mediæval writers, and in later poetry. He is to be the conqueror of Jupiter, and the ancients avoided even the mention of his name.

DEMO'NAX, a cynic philosopher of Athens, of the 2d c. A.D. He was a native of Cyprus, highly honored while living, and at death publicly buried with great magnificence.

DEMOS, a name applied first to the 100, and afterwards to the 174 districts into which Attica was divided. They had each their own officers, assemblies, and religious usages.

DEMOS'THENES, a conspicuous Athenian gen. in the Peloponnesian war. He was one of the commanders sent, 413 B.C., to reinforce Niceas at Syracuse; but he was captured and put to death.

DEMPSTER, JOHN, D.D., 1794-1863; a Methodist clergyman, a native of New York. When young he was a peddler. At the age of 18 he was converted, and in 1816 he was admitted to the general conference, preaching in various places in New York and Canada. In 1835, he was a missionary to Buenos Ayres. In 1842, he had charge of a church in New York. In 1847, he founded the biblical institute which now constitutes the school of theology of Boston university. In 1856, he established a similar institution near Chicago. His *Lectures and Addresses* have been published.

DENDROBIUM, a genus of parasitical plants, almost entirely confined to tropical Asia. The flowers are grotesque in form, but very beautiful, some of which are purple, some a deep yellow, and some green; and all are very fragrant. When artificially raised they require a high temperature.

DENHAM, DIXON, 1786-1828; an English soldier and traveler. After the Napoleonic wars he traveled in Europe, and in 1821, joined the English government expedition to Africa under Clapperton. Denham himself explored the region around lake Tchad, in 1823. In a fight with the Arabs he was wounded and separated from his company, but found his way back after great suffering, reaching England in 1825. He published *Narrative of Travels and Discoveries in Northern and Central Africa in the years 1822, 1823, and 1824*.

DENMAN, THOMAS, Baron, 1779-1854; chief-justice of England; the son of a physician, educated at Cambridge. His success at the bar was rapid, and he speedily rose to rank next to Brougham and Scarlett. His greatest point in advocacy was as counsel for queen Caroline. In this trial he made the king his enemy, and thereby retarded his own promotion. In 1818, he was elected to parliament, and took a seat with the whig opposition. He remained in the commons until his elevation to the bench in 1832. In 1830, he was attorney-general under the Gray administration. Two years later he was made lord chief-justice of the king's bench, and in 1834, was raised to the peerage. He resigned the office of chief-justice in 1850, and retired to private life.

DENNER, BALTHASAR, 1685-1747; a German portrait-painter employed by Frederick the great; went to England by invitation of George I., where he was not appreciated. His chief peculiarity consisted in the fineness of his mechanical finish, which extended to depicting even the almost invisible furze or hair growing on the smooth skin. Charles VI. paid 4,700 florins for a "Head of an Old Woman" by this artist.

DENNIE, JOSEPH, 1768-1812; b. Mass.; graduated at Harvard in 1790. In 1795, he became connected with the *Tablet*, a Boston weekly journal; and the same year established *The Farmer's Weekly Museum* at Walpole, N. H., in which he published, over the signature of "The Lay Preacher," a series of papers which attracted universal attention. In 1801, he began the *Portfolio* at Philadelphia, and adopted the *nom de plume* of "Oliver Oldschool." This publication was the channel through which the letters of many great men appeared.

DENNIS, a t. in Barnstable co., Mass., 65 m. s.e. of Boston; pop. '70, 3,369. The township extends quite across the peninsula, and is intersected by the Cape Cod railroad. Most of the people are engaged in ship-building, navigation, and fishing.

DENT, a co. in s.e. Missouri, reached by a branch of the Atlantic and Pacific railroad; 750 sq.m.; pop. '70, 6,357-31 colored. The soil is fertile; productions agricultural. Co. seat, Salem.

DENTATUS, MANIUS (or MARCUS) CURIUS, a Roman consul in the first half of the 3d c. B.C. He was made consul in 290, and conquered the Samnites; he defeated Pyrrhus in two important engagements in 275, and the next year reconquered the Samnites, and also defeated Lucanians and Brutians. At the close of his third term as consul he

retired from public life and cultivated his farm. He was elected censor in 272, and while in office built an aqueduct to bring water into the city, and a canal for draining marshy land. His name "Dentatus" was given because it was said that he was born with teeth.

DENTON, a co. in n.e. Texas, on the upper waters of Trinity river; 900 sq.m.; pop. '70, 7,251—500 colored. It is a prairie and forest region. Agriculture is the chief business. Co. seat, Denton.

DENVER, the capital of Colorado, in Arapahoe co., on the South Platte river, about 15 m. from the eastern base of the Rocky mountains, at the junction of the Kansas Pacific, Denver Pacific, Colorado Central, and Denver and Rio Grande railroads, 620 m. w. of Omaha; pop. '70, 4,759; '80, about 35,718. The city, 5,375 ft. above the sea, occupying a series of levels rising gradually towards the mountains, commands a magnificent view of the nearer plains and of peaks covered with perpetual snow. Its climate is delightful. It is the commercial as well as the political capital of the state, and has had wonderful growth. There are many manufactories, smelting and refining works, a United States mint, and various public buildings. In 1858, there was not a human habitation in the vicinity.

D'ÉON, CHEVALIER. See EON, DE BEAUMONT, *ante*.

DEPARTMENT is a word used to designate a subdivision of executive government, under the control of a subordinate officer. In the United States, e.g., there are the departments of state, justice, interior, war, navy, treasury, post-office, and agriculture. In some of these departments the work, according to its character, is distributed between different bureaux. The government itself is conducted in three separate departments, each independent in its sphere, viz., the legislative, the judicial, and the executive. The country is also subdivided into military departments, each under an officer appointed by authority of the president.

DE PERE, a t. in Brown co., Wis., on Fox river, and the Wisconsin Central, and Chicago and Northwestern railroads; pop. '70, 3,834. There are two villages on opposite sides of the river connected by a bridge of 1500 feet. The Milwaukee and Northern railroad passes along the river. In the villages are many manufactories.

DE PEYSTER, ARENT SCHUYLER, 1736-1832; an English soldier, native of New York, holding command at Michilimacinae; through whose exertions the Indians very generally sided with the British during the revolutionary war. Late in life he resided in Dumfries, Scotland, and was on terms of friendship with Robert Burns, who was a private in De P.'s regiment of volunteers, and with whom he carried on a poetical controversy in a newspaper. Burns dedicated to him his *Poem on Life*. He was a commissioned officer in the British army for 77 years.

DE PEYSTER, JOHANNES, d. 1685; one of the early settlers of New York, and founder of a noted family. He was a French Huguenot. In New York he filled many offices, including that of mayor.

DE PEYSTER, JOHN WATTS, b. New York, 1821; descendant of Johannes; a writer on military and historical subjects; author of *Life of General Torstensen*; *The Dutch at the North Pole*; *The Dutch in Maine*; *Early Settlement of Acadia by the Dutch*; *The Dutch in the Battle of the Baltic*; *History of Carusius*; *The Ancient, Mediaval, and Modern Netherlands*; *Winter Campaigns the Test of Generalship*; *Practical Strategy*; *Secession in Switzerland and the United States Compared*; *Decisive Conflicts of the late Civil War*; etc. De P. was active in introducing a paid fire department in New York. His three sons, J. Watts, jr., Frederick, jr., and Johnston L., were gallant officers of the union army in the war of the rebellion.

DEPORTATION, the forcible removal of a people from their country; in former times employed as a means of securing the fruits of conquest. In the Scriptures it is recorded that not only the Jews, but other peoples were carried away captives. Banishment is still a method of punishing political offenders in France and some other countries.

DEPPING, GEORGES BERNARD, 1784-1853; a native of Westphalia, resident of Paris; a writer on a wide range of subjects. Two of his juvenile works attained wonderful popularity: *Winter Evenings*, including the instructions of a father to his children on moral and scientific themes; and *Beauties and Marvels of Nature in France*. He assisted Malte-Brun in his geographical works, and wrote a number of important histories, books of travel, biographies, etc.

DEPRÈS, or DESPREZ, JOSQUIN, 1440-1521; a French musical composer, of whose life little is known. He was considered by his contemporaries to be the greatest master of his age. Luther was among his admirers. His works consist chiefly of sacred music.

DERAH, the Egyptian unit measure of length. The one most in use is 22.37 English in., or 57 centimeters. The derah is divided into the *kadam*, one half; the *abdat*, one sixth; and the *kerat*, one twenty-fourth. The derah by which dry-goods are sold is 25½ in., and the derah of Constantinople is 66.34 inches.

DERBY, a t. in New Haven co., Conn., on the Housatonic river at the mouth of the Naugatuck; pop. '70, 8,020. The place is reached by the New Haven and Derby and the Naugatuck railroads, and is approached by vessels drawing 10 ft. of water. It contains the villages of Birmingham and Ansonia.

DERMO-SKEL'ETON, a term applied to the coriaceous, crustaceous, or osseous integument that covers most invertebrate and some vertebrate animals. It serves as a protection for the soft parts of the body.

DERRY. See LONDONDERRY, *ante*.

DESAGUADERO, a great plain between the e. and w. branches of the Bolivian Andes, two thirds of it in Bolivia and one third in Peru, about 400 m. long by 30 to 80 m. wide. This plain is 13,500 ft. above the sea. The region is rich in silver, copper, and tin, and there are probably other minerals. Thermal springs are a feature also. There are but two seasons, dry and wet, answering to summer and winter. Not a tree is to be seen. The lower valleys are covered with luxuriant grass, and afford excellent pasturage. Grain is not cultivated. Potatoes grow wild. The Indians make huts, boats, mats, and other articles of convenience, from native rushes. Cattle, horses, asses, and mules are plentiful. The most important animals are the guanaco, and the allied genera of alpacas, llamas, and vicunas, all yielding valuable wool. Oruru is the most important town.

DE SANCTIS, LUIGI, 1808-69; an instigator of the Protestant movement in Italy, for several years a Roman Catholic professor of theology. In 1847, he established a Protestant journal, the *Eco del Verité*; in 1868, he accepted the professorship of theology in the Waldensian seminary at Florence.

DÉSAUGIERS, MARC ANTOINE MADELEINE, 1772-1827; a French dramatist and composer of songs; author of many dramas, including comedies, operas, and vaudevilles, produced in rapid succession. His singing of his own songs made his company greatly sought after. Late in life he undertook theatrical management, but with no great success.

DESAULT, PIERRE JOSEPH, 1774-95; a French anatomist and surgeon, who, when but 20 years of age, opened a school in Paris, where his success excited the wonder and jealousy of the established professors. In 1776, he was admitted a member of the incorporation of surgeons, and successively held other positions of honor. In 1782, he was appointed surgeon-major to the *De la Charité* hospital, and came to be regarded as one of the first surgeons of the age. He next went to the hôtel Dieu, and after Moreau's death the surgical department of the hospital was intrusted to him. There he instituted a clinical school for surgery, and attracted pupils from all countries, often having audiences of 600; and most of the surgeons of the period derived their knowledge in great part from his lectures. He introduced many improvements in the practice and in surgical instruments. During the revolution he suffered undeserved persecution, but was afterwards restored to favor.

DES BARRES, JOSEPH FREDERICK WALLET, 1722-1824; an English scientist; descendant of a Huguenot family which fled from France to England. He graduated from the royal military academy at Woolwich, and was sent to America as a lieutenant, where he was engaged in the French and Indian war. He was in the expedition against Louisburg, and in the siege of Quebec was aid to Wolfe, who fell into his arms when he received his death-wound. For some years afterwards Des Barres was charged with important engineering surveys in Nova Scotia, Newfoundland, and other British colonies, with a view of establishing a chain of military posts. He was also engaged in correcting old and making new charts of the North American coast, which were published in 1777, under the title of the *Atlantic Neptune*. In 1784, he became governor of the island of Cape Breton, and soon afterwards began to build the town of Sydney, where he opened the coal trade. In 1804, at the age of 82, he was made lieutenant-governor and commander-in-chief of Prince Edward's Island. He lived to be 102 years old.

DESCHAMPS, EUSTACHE (MOREL), a poet of France of the 14th century. His life was a long series of tournaments, feasts, and battles, and he was one of the most popular men of his time. He saw the English invasion of 1358; was at the siege of Rheims, and witnessed the march on Chartres. In 1360, he became the vassal of the young princess Isabella, to whom he paid all possible poetic homage. He was a great traveler, but in France he lived the true life of a *trouvere*, wandering from castle to castle with his poems. He was master of arms to Charles V., who appointed him governor of Fismis. One of his ballads is addressed to Chaucer, the English poet. None of his works were published until 1832.

DESERTER, a soldier or seaman who forsakes his flag. In time of war such an act is punishable with death or otherwise as a court-martial may decide. In time of peace, the punishment is comparatively light.

DESFONTAINES, RENÉ LOUICHE, 1751-1833; a French botanist. He began the study of medicine in Paris, took his degree in 1783, and was elected to the academy. He went the same year to n. Africa, and spent some time in scientific explorations in

Barbary, returning with a large collection of plants and objects in natural history. He was then appointed professor in the famous Jardin des Plantes, and made that place thenceforth his world. He escaped the perils of the revolution, although on two occasions he ventured from his retirement to rescue the naturalists Ramond and Lheritier from prison and probably death. At the establishment of the legion of honor, Desfontaines was admitted one of the members. At the age of 63 he married a young wife, but she soon died. In 1831, he became blind and could thereafter recognize his favorite plants by touch alone. He was the author of an important work on the flora of the Atlantic coast, and of many valuable essays on his favorite subjects.

DESFUL. See DIZFUL, *ante*.

DESHA, a co. in s.e. Arkansas on the Mississippi, and intersected by White and Arkansas rivers; 600 sq.m.; pop. '70, 6,125—3,934 colored. It is low and subject to inundation; productions agricultural. Co. seat, Napoleon.

DESHOULIÈRES, ANTOINETTE DU LIGIER DE LA GARDE, 1634-94; a French poetess, daughter of the chevalier de la Garde, mistress of the palace to the queens Mary de Medici and Anne of Austria. She won the friendship and admiration of the most eminent literary men of the age, some of whom gave her the title of "the Tenth Muse." Her writings embrace almost every form of verse, and included a number of dramatic pieces. Voltaire pronounced her the most successful of the female poets of France.

DESIGN, SCHOOLS OF (*ante*), institutions where the arts of ornamental and mechanical drawing are taught. They are numerous in the United States. One of the oldest is the "National Academy of Design," founded 1828, in New York, whose annual exhibitions of paintings (April to July) are well known. Another, entirely free to all students, is in the Cooper institute in the same city. In the public school system of Massachusetts free instruction in drawing is provided.

DES MOINES, a co. in s.e. Iowa, on the Mississippi, drained by Flint river, and intersected by three railroads; 408 sq.m.; pop. '75, 35,106. It has a prairie and forest surface, with fertile and well cultivated soil. Agriculture is the chief occupation. Co. seat, Burlington.

DES MOINES, a city, the capital of Iowa, in Polk co., at the head of steam navigation on the Des Moines river, and the Chicago, Rock Island, and Pacific, and Des Moines Valley railroads; pop. '75, 16,130. The city is regularly laid out, on both sides of the river, on a plateau 15 or 20 ft. above the water. In the rear is much higher ground, on which are many fine residences. There are public buildings of importance, including the new state-house (estimated cost \$3,000,000); more than 20 churches, 3 national banks, 3 daily and 7 weekly papers, and extensive manufactories. It was chartered and became the capital of the state in 1855.

DES MOINES RIVER, the most important stream in Iowa, rising from a chain of lakes in Minnesota. It runs through about the center of the state and joins the Mississippi a little below the city of Keokuk. In its course of 300 m. it drains more than 10,000 sq.m. of fertile territory.

DE SOTO, a parish in n.w. Louisiana, on the Texas border, drained by Red and Sabine rivers; 910 sq.m.; pop. '70, 14,962—9,581 colored. Corn and cotton are the chief productions. Co. seat, Mansfield.

DE SOTO, a co. in n.w. Mississippi on the Tennessee border and the Mississippi, and crossed by the Mississippi and Tennessee railroads; 960 sq.m.; pop. '70, 32,021—17,745 colored. The surface is level and much of it swampy. Productions, wheat, corn, cotton, and butter. Co. seat, Hernando.

DE SOTO, FERDINANDO, 1496-1542; one of the early Spanish explorers of North America. He distinguished himself when young in literary studies and athletic exercises. In 1519, he accompanied Pedrasias Davila, his patron, to the isthmus of Darien, and was a most daring and independent opponent of the tyrannical rule of that officer, who was afterwards governor of Darien. Leaving Davila's service, in 1528, he explored the coast of Guatemala and Yucatan, seeking for a supposed water communication between the Atlantic and Pacific. In 1532, he was in Pizarro's expedition for the conquest of Peru, and used all his influence with the Spanish butcher to prevent the murder of the Peruvian king. Having amassed a fortune, De Soto returned to Spain and married Davila's daughter. In 1536, moved by the reports of the mystical El Dorado, he undertook the conquest of Florida, and sailed in April, 1538, with 20 officers, 24 priests, and 600 men. May 25, 1539, he landed at Tampa bay, and followed the track of Narvaez, a former Spanish invader. In July, 1539 his ships were sent back to Havana. In 1540, he slowly worked westward, having many conflicts with the Indians. His second winter was spent in the Chickasaw country. These Indians, in the spring, burnt his camp and their own villages, because he attempted to force them to carry his baggage, and 40 of his men were burnt to death. After several days of marching mainly through swamps he reached the Mississippi, June, 1541, being the first European to look upon that

mighty river. He constructed rude barges and crossed over, marching towards the highlands of White river, the w. limit of his exploration. Turning s. and passing the hot springs of Arkansas, he passed his third winter on the Washita river. In the spring he moved down the Washita to the Mississippi; and was marching along the latter river when he was taken with fever and died either in May or June, 1542. To keep the knowledge of his death from the natives, his body was sunk at night in the middle of the river. His wife died at Havana on the third day after hearing of his fate.

DESSAIX, JOSEPH MARIE, Count, 1764-1834; a gen. in the French service, who studied and began to practice medicine in Paris, but went to Savoy in 1791, where he formed a democratic association, and became a capt. of volunteers. He was actively engaged at the siege of Toulon, and served under Napoleon in Italy. He was one of the council of 500 of 1798, and opposed the *coup d'état* of the 18th Brumaire. He was made a brig.gen.; and, in the campaign against Austria, gen. of division. Napoleon gave him the title of "the intrepid," and the dignity of a count of the empire. He was appointed commander of the national guards at Lyons, after the revolution of 1830.

DE STAËL. See STAËL-HOLSTEIN, *ante*.

DESTERRO, NOSSA SENHORA DO DESTERRO, or SANTA CATHARINA, a port of Brazil, the most important town in the province of Santa Catharina, on the w. coast of the island bearing the same name; 27° 30' s., and 48° 30' w.; pop. 8,000. It is strongly fortified; its harbor is excellent, and it has some foreign commerce. It is well laid out, but poorly built.

DESTUTT DE TRACY, ANTOINE LOUIS CLAUDE, Count de Tracy, 1754-1836; a French statesman, member of the provincial assembly of the Bourbonnais, and appointed delegate of the nobility to the states-general in 1789. He was a leader of reform measures. In 1792, he joined the army under Lafayette and followed him over the frontier. Returning secretly to France, he was arrested and imprisoned. After the revolution, he was made a senator. He voted for the overthrow of the empire in 1814, but opposed reactionary measures. He adopted the views of Condillac, and became an earnest materialist. He wrote, among other works, a *Commentary on the Spirit of the Laws*, which was translated by president Jackson for a text-book.

DETERMINATE PROBLEM, in geometry, a problem of a limited number of solutions; as: "Given the base, perimeter, and area, to construct a triangle." For this there are four general solutions. But if either of the three propositions be omitted, it becomes indeterminate.

DE TROBRIAND, PHILIP REGIS, b. France, 1816; a man of letters, long resident of the United States. In the war of the rebellion he was an officer on the union side, and became brevet-brig.gen. in the United States army. He has written a number of works in French, including *Four Years in the Army of the Potomac*. From 1854 to 1861, he was editor of the *Courrier des Etats Unis*, the leading journal in the French language in the United States.

DETROIT (*ante*), the most populous city of Michigan, and the capital of Wayne co., on the w. bank of the Detroit river, about 18 m. from lake Erie and 7 m. from lake St. Clair. The site is sufficiently elevated above the river to afford excellent facilities for drainage, which have been thoroughly improved. The river, which is the dividing line at this point between the United States and Canada, is half a mile wide and over 30 ft. deep, forming the best harbor on the lakes. The city extends 6 or 7 m. along the bank of the river and from 2 to 3 m. back from it. The river front is lined with warehouses, mills, foundries, grain elevators, railway stations, shipyards, dry docks, etc., the signs of an enterprising and thriving community. Fort Wayne, a mile below, commands the channel. The site of the city was visited by the French early in the 17th c., but no permanent settlement was made by them until 1701. Sixty-two years later, in 1763, at the close of the war between England and France, it fell into the possession of the English. Immediately after this, Pontiac, the great Ottawa chief, made a desperate but unsuccessful effort to expel the whites from all that region. In 1778, Detroit contained only 300 inhabitants, living for the most part in log huts. A Roman Catholic church had survived from the days of the French possession. The British, in 1778, erected a fort, which, after the Americans gained possession, became Fort Shelby. At the peace of 1783, Detroit became a part of the United States, but the Americans did not take possession until 13 years later. The place was wholly destroyed by fire in 1805, and two years afterwards the present city was laid out. In the war of 1812 it was surrendered by gen. Hull to the British, but recovered by the Americans after the battle of lake Erie in 1813. It was incorporated as a village in 1815, as a city in 1824. It was the seat of government of the territory of Michigan from 1805 to 1837, and of the state of Michigan from the latter date till 1847. The plan of the city is not altogether harmonious, but the streets are broad and well paved and lighted, many of them lined with beautiful shade trees. The avenues are from 100 to 120 ft. wide. Many of the business structures are large, solid, and imposing, and there are many elegant and costly private residences. The city has had a very rapid growth, the population increasing from 770 in 1810 to 79,750 at the last census, when there were 15,639 families and 14,688

dwelling. Of the 79,570 inhabitants, 35,381 were of foreign birth, and 2,235 colored. The larger portion of the foreigners were Germans. The principal park of Detroit is the "Grand Circus," and it is the center from which the principal avenues radiate. The plan of the city leaves a number of small triangular parks, where the streets intersect each other at oblique angles. The "Grand Circus" is semicircular and divided by Woodward avenue into two parts, each adorned with a fountain. The "Campus Martius" is a plot of ground 600 ft. long and 250 wide, crossed by two avenues. Facing it on one side is the city hall, a fine structure of sandstone, 200 ft. in length by 90 ft. in width, which cost \$600,000. In front of the city hall is a monument to the soldiers of Michigan who fell in the war of the rebellion; and facing the Campus Martius on the n. is an opera house, a large and fine building. The United States custom-house and post-office, a large building of stone, is on Griswold street. The largest church edifice is the Roman Catholic cathedral, but there are several of other denominations which are fine specimens of architecture. The Roman Catholic convent of the Sacred Heart is a large and handsome structure. The Michigan Central freight depot is 1250 ft. long and 102 ft. wide—a single room, covered by a self-supporting roof of iron; and near it stands a grain elevator with cupola, commanding a fine prospect. The house of correction is also a very handsome building, erected at a cost of \$300,000, with a capacity for 450 inmates. There are two beautiful cemeteries, one on the w., the other on the e. side of the city; and besides these several smaller ones belonging to different religious sects. Nearly a dozen lines of street railroad intersect the different parts of the city, and ferry-boats ply constantly between it and Windsor on the Canada side of the river. There are numerous lines of steamers with elegant and commodious boats running to different points on the lakes. Eight great lines of railroad center here, connecting Detroit with all parts of the United States and Canada. The foreign commerce of the city is almost exclusively with the adjoining British possessions. For the year ending June, 1873, the exports amounted to almost \$3,000,000, the imports to about \$2,000,000. In the second year there were entered and cleared 1949 American and 1522 foreign vessels, with a capacity of about 8,000 tons. The coasting trade in the same year, by steam and sailing vessels, amounted to over 773,000 tons. The number of sailing vessels belonging to the port was 188, of steamers 120. The exports for the most part consist of corn, oats, wheat, lumber, cotton, hogs, bacon, and lard. Large quantities of domestic produce, from Michigan and states farther west, pass eastward through D., the chief articles being flour, wheat, corn, oats, barley, apples, butter, hides, hops, dressed hogs, pork, beef, wool, and sheep. The trade in lumber is very large, the receipts in 1872 being 76,947,000 ft., of which less than 5,000,000 ft. was from Canada. About 60,000 cattle, valued at about \$2,500,000 were sold in D. in the same year. The manufactures have developed rapidly and are very extensive. There are numerous foundries and blast-furnaces, copper-smelting works, locomotive and car works, safe factories, furniture establishments, iron-bridge works, brick-yards, flour-mills, tanneries, breweries, distilleries, and tobacco and cigar factories. The capital invested in banks of discount was \$2,250,000 and there were 4 savings banks with deposits of about \$400,000. There are also fire, marine, and life insurance companies doing an extensive business. The cash value of property in 1872 was estimated at \$78,718,913. The police and fire departments are well organized. The city is abundantly supplied with water from the Detroit river by works valued at \$1,221,752. Hospitals and asylums abound. The public schools are well organized and efficiently managed. The Roman Catholics and some of the Protestant sects have schools of their own. The Detroit medical college was organized in 1868, the homœopathic college, 1871. The public library contains 25,000 volumes; that of the young men's society 12,000; that of the mechanics' society 4,000. There are in the city 8 daily papers (3 of them German), 3 tri-weekly, 14 weekly, 7 monthly. There are 64 churches, of which 9 are Roman Catholic, the others being divided among the various denominations, of which the Baptists, Methodists, Presbyterians, and Lutherans are most prominent.

DEUEL, a co. in e. Dakota, on the Minnesota border, as yet unsettled. It is watered by a number of lakes, and by affluents of the Big Sioux and Minnesota rivers.

DEUTERONOMY (*ante*) is the English title of the fifth book of Moses, derived from the Greek translation, and signifying "repetition of the law." It well expresses the general scope of the book, which is a review of the 40 years in the wilderness, including the laws which had been given, and the events which had occurred. Whatever may have been the time occupied in writing it, the uttering of it to the people began two months before the end of the 40th year. To the arguments advanced by some writers that it was not written by Moses, the following answers (among others) have been given: 1. These writers are not agreed among themselves. The older of them affirm that D. was written long after the other books of the Pentateuch; the newer school pronounce it the quarry from which the materials of the others were taken. This conflict of opinions at least precludes the assertion that its style betrays its late origin. 2. The alleged anachronisms, discrepancies, and difficulties admit, for the most part, of easy and complete explanation on the supposition that Moses was the author. 3. The unanimous and unwavering testimony of the ancient Jewish church and nation is that Moses was the author of the book. This is testimony against them-

selves, as it involves the admission that their sufferings as a nation were divine judgments on their sins. Consequently, their possession of the book and acknowledgment of it as a writing of Moses can be rationally accounted for only on the supposition that the generation in the wilderness received it from his hand. At no subsequent period could it have been imposed on them as a law which had been given them in the wilderness, under acknowledged obligation to which they had always lived, and for the transgression of which they had been punished in the past, and would be in the future. And as no generation, after the settlement in Canaan, could have been persuaded to receive it for the first time, so to every subsequent generation the temptation became stronger, if it were possible, to deny and reject its authority. 4. It had, in a remarkable manner, the attestation of the apostles and of Christ. Peter and Stephen quoted from it to large assemblies of Jews, as truly the words of Moses; Paul cites it in writing to Jews at Rome; and Christ drew from it, as the word of God, his answers to all the temptations of Satan.

It contains: I. A review of the history from Horeb to Kadesh; from Kadesh to the land of the Amorites; of Moses' own transgression, his exclusion from Canaan, and the appointment of Joshua in his stead; of the reception of the law at Horeb, spoken by the voice of God, and written by him on tablets of stone. The review of these events is made the ground of an earnest exhortation to reverence, obedience, and gratitude to God. II. A review of the laws: 1. Of the moral law, and of the effect produced on the people by the proclamation of it; of the first and second commandments especially, with exhortations to obedience, and warnings against transgression; and, again, of the whole law, with a renewed appeal for obedience in view of past experience; of future blessings promised, and wrath threatened. 2. Of laws for the regulation of religious ceremonial and of personal life; for the abolition of idolatry and the observance of divine worship; against false prophets, idolatrous cities, and personal disfiguration as a sign of mourning; concerning clean and unclean animals, the year of release, the annual feasts, judges and justice; and against groves and images. 3. Of the strictly judicial law in numerous details. III. Provision for the confirmation of the law by writing it on large stone tablets to be set up on Mt. Ebal, with the uttering of curses on transgressors, and of blessings on the faithful. This is followed by an earnest call for consecration of heart and life to God. Pardon is promised to the penitent, and the choice of life or death is set before all. IV. The close of the official and personal history of Moses. He appointed Joshua to succeed him, charging him to be faithful and courageous; delivered a copy of the law to the priests and Levites to be placed by the ark of the covenant, and read publicly to the congregation every seven years; and as he had commenced the journey through the wilderness with a triumphant song, so now he closed it with songs of review, warning, and prophetic blessing on the tribes. The account of his seeing the promised land, the record of his death and burial, and the testimony to his greatness as a prophet and servant of the Lord, were added, probably, by Joshua, as the appointed finisher of his work.

DEV, or DEW (Persian), and DEVA (Sanskrit); kindred names; in Persian applied, according to Zoroaster, to a race of demons created by Ahriman, and subject to his commands. The Sanscrit word in Hindu mythology signifies "gods."

DEVELOP, in algebra, to write out in full the operations set down in symbols. In geometry, to develop a curved surface is to produce on a plane an equivalent surface, as by rolling the curved surface so that all parts shall successively touch the plane.

DEVENS, CHARLES, JR., b. Mass., 1820; graduated at Harvard, and admitted to the bar in 1841. He has been a member of the state senate; U. S. marshal for the district; served in the union army during the rebellion, being several times wounded; and is now associate justice of the Massachusetts supreme court.

DE VERE, MAXIMILIAN SCHEELE, LL.D.; b. Sweden, 1820. He was in the Prussian diplomatic service, but came to the United States and was appointed to the chair of modern languages in the university of Virginia, 1844. Among his work are *Outlines of Comparative Philology*; *Stray Leaves from the Book of Nature*; *Studies of our English*; *The Great Empire*; *Wonders of the Deep*; *Americanisms*; *The English in the New World*; etc.

DEVEREAUX. See ESSEX, EARL OF, *ante*.

DEVIATION OF THE PLUMB-LINE, an effect observed near cliffs or mountains, which seems to show that the attraction of masses of earth deflect a perpendicular line. Similar effects have been observed on plains, whence it is argued that there must be hollows underneath, or masses of earth of different degrees of density.

DE VIGNY, ALFRED VICTOR, Comte, 1797-1863; b. France; poet and novelist. Having been in the army 13 years without seeing active service, he resigned. He had already published several poems, and being in pecuniary ease (having wedded a rich English lady) he started in earnest on his poetical career contemporaneously with Victor Hugo and Lamartine. De Vigny published a volume in 1822, and in 1824 came *Eloa*, a poem of delicate fancy, the story of a "sister of the angels." Soon afterwards he published *The Deluge*; *Moses*; *Dolorida*, etc. In 1826, appeared *Cinq Mars*, a historical romance of a conspiracy under Louis XIII. This had great success. In 1829, he translated

Othello for the Parisian stage, and in 1836, made a drama of the romantic life of Chatterton, the English boy-poet. His best prose work is *Stello ou les Diables bleus*, issued in 1832. His last effort was *Poëms philosophiques, ou les Destinées*, part of which was published after his death.

DEVIL-FISH, a name given by fishermen along the southern Atlantic and gulf coasts of the United States to a cartilaginous fish of the ray family, *ceratopterus vampirus*, Mitch. The outline of the fish is nearly an isocles triangle, the apex at the tail, the altitude of the triangle, or length of the fish, being about half the breadth, from tip to tip, of the pectoral fins. Specimens are described as 10 ft. long, 22 ft. wide, and weighing 4 or 5 tons. A mounted specimen is in the museum of the Chicago academy of sciences. It is a small fish of the kind; 5½ ft. long, 11 ft. broad, 18 in. thick at about 2 ft. behind the mouth; and probably weighed 700 lbs. when alive. The skin is thin and rough, like that of a shark; color, slaty-black above, creamy-white beneath, but darker along the edge. The head, slightly protuberant along the base of the triangle, is retracted; mouth large and cavernous; nostrils near the angles of the mouth, in the under surface of the upper jaw; eyes protruding at the side of the head; ears, or auricular openings which serve the purpose, a little to the rear of the eyes. The mouth is armed at either side by a flat cartilaginous protuberance, in the specimen mentioned about 12 in. long, and of the breadth and thickness of a man's hand; in life, the creature can twist this into a cone, which resembles a horn, whence the part *cera* in the generic name. These members, perhaps, act like hands in sweeping food into the mouth. There are 5 large, linear, brachial openings on each side of the under surface, in the rear of the lower jaw. The tail is very slender, like a whip-lash, four-sided, and so rough that a lash received from it would cut to the bone. The stomach of this fish contained about two bushels of partly digested algæ, of a species which grows abundantly in southern waters. The evidence is against the supposition that it consumes any considerable quantity of animal food. See CEPHALOPTERA, *ante*.

In his *Travailleurs de la mer*, Victor Hugo gives a thrilling account of a nameless and horrid monster which he calls *pieuvre*, a word rendered by his translators "devil-fish." The celebrity of the narrative has attached the name to the creature there described, but which does not really exist as pictured by the novelist. The account most nearly fits the cephalopodous mollusk called the *poalpe* (see *ante*), which grows to a large size in tropical waters.

The name is also given to a fish better known as the angler, *hophius piscatorius* (see *ante*), and by ignorant fishermen to various other fishes of grotesque appearance.

DEVIL'S ADVOCATE. See ADVOCATUS DIABOLI, *ante*.

DEVIL'S BRIDGE, in Switzerland; a curious bridge over which the road to Italy crossed the Reuss. The original bridge, built in 1118, was partially destroyed by the French in 1799. It was restored, but is no longer in common use. "The Hole of Uri" is the name given to a tunnel near the bridge, through which the road passes.

DEVIL-WORSHIPERS, or YEZIDEES, a sect in Koordistan and Armenia, numbering about a quarter of a million. They respect the devil, and look for him to be restored to heaven, at which time they desire his friendly services.

DEVONIAN FORMATION, DEVONIAN SYSTEM (*ante*). At the beginning of the Devonian period the dry land of North America was confined to the present territory of eastern Canada and New England. The Alleghany mountains were sketched in a series of islands and coral reefs which made a barrier between the ocean and the inland sea. There were no large rivers; the valleys of the Hudson, the Connecticut, and the St. Lawrence were merely outlined, and the Ottawa had begun its work in the azoic region between the St. Lawrence and Labrador. The Devonian period was occupied by a series of oscillations of level, the amplitude of the variations, and the consequent thicknesses of deposit being greater in the eastern part. The mediterranean of the interior opened s. into the gulf of Mexico, n. into the Arctic sea, and covered all the northern central region of the present continent with shallow lagoons, separated by low sandy areas.

According to the geologists of the New York survey, the D. F. of America is arranged thus, beginning at the top:

DEVONIAN AGE.

- | | |
|----------------------------|-------------------------|
| 5. Catskill period..... | Catskill red sandstone. |
| 4. Chemung period..... | { Chemung epoch. |
| | { Portage epoch. |
| 3. Hamilton period..... | { Genesee epoch. |
| | { Hamilton epoch. |
| | { Marcellus epoch. |
| 2. Corniferous period..... | { Corniferous epoch, |
| | { Schoharie epoch. |
| | { Cauda-galli epoch. |
| 1. Oriskany period..... | Oriskany red sandstone. |

1. The Oriskany sandstone extends from near Oriskany, Oneida co., N. Y., s.w. along the Appalachians into Pennsylvania, Maryland, and Virginia. It appears near

Buffalo, in Canada near Waterloo, in Ohio, Indiana, southern Illinois, and Missouri. Its thickness at Oriskany is about 30 ft.; in Illinois, 250 to 300 feet. Its rocks are mostly sandstone, but there are strata of limestone in the Mississippi valley, and in the region w. and n. of Moosehead lake. Its most abundant fossils are *spirifers*, with other mollusks. There are no land-plants in the New York and western beds, but lycopods occur in the upper limestones at Gaspé.

2. The Corniferous period. The cauda-galli grit, chiefly argillaceous sandstone, is 50 or 60 ft. thick in the Helderberg mountains of eastern New York. The name comes from a characteristic fossil sea-weed of feathery form. The rocks of the Schoharie epoch are fine-grained calcareous sandstones, similar in quality and distribution to the preceding, but differing in their fossils, which are very numerous. The upper Helderberg is farther divided into the Onondaga limestone and the corniferous limestone—the latter taking its name from the presence of much imperfect flint or horn-stone (*cornu*, a horn). The corniferous limestones occur in New York, in Ohio along lake Erie, and throughout the Mississippi basin from Michigan to Kentucky, and from Ohio to Missouri. Its greatest thickness, in Michigan, is 354 feet. Its notable fossil plants are lycopods, conifers, and tree-ferns. This period was the coral-reef period of palæozoic times, and corals are found in great number and variety. The falls of the Ohio, at Louisville, are caused by such an ancient reef, and are rich in coral fossils. The remains of vertebrates first appear in the corniferous epoch. They include relics of sharks, cestracant and hybodont; of ganoids, having the body covered with shining plates of mail, now represented by the gar-pike; and of placoderms, having the body covered with bony plates, such as are worn by the turtles—fishes which seem to have linked the ganoids with the sharks.

3. The Hamilton period includes the Marcellus shales, the Hamilton beds, and the Genesee shales. This formation extends across New York, its greatest thickness, 1500 ft., being e. of the center. It occurs southwardly to Tennessee, and westwardly to Iowa and Missouri; also in the valley of the Mackenzie, so that Meek believed that Devonian rocks are continuous from Illinois to the Arctic ocean, a distance of 2,500 miles. The Hamilton beds furnish superior flagging stones; the Genesee shales produce great quantities of petroleum, and occasionally of gas that may be used for heating and lighting. The vegetable fossils are lycopods, including lepidodendroids, sigillarids, and stigmaria, ferns, equisetæ, and conifers. The animal fossils still abound in corals and brachiopods; in this period appears the goniatites, the ancestor of the modern nautilus. Among articulates we notice a new form of trilobite, and especially the earliest insect remains, in form akin to the ephemeræ. Vertebrates are represented by fishes, like those of the corniferous period.

4. The epochs of the Chemung period are the Portage and the Chemung. The rocks of the lower, or Portage group, appear in western New York, having a thickness of 1000 ft. on the Genesee, and 1400 ft. on lake Erie. The Chemung rocks extend over the southern counties of the state, being about 1500 ft. thick near Cayuga lake. Farther s., in Pennsylvania and beyond, they become 3,000 ft. thick. Ripple-marks, mud-marks, and sun-cracked mud abound, indicating shallow seas, and lands alternately under, and out of, water. Sea-weeds and land-plants alternate.

5. The Catskill period produced shales and sandstones of various colors, chiefly red. This formation has a thickness of 2,000 to 3,000 ft. in the Catskills, and nearly 6,000 ft. in the coal regions of Pennsylvania, but thins out toward the west. It contains few fossils, and these not materially different from those of the lower periods. The Devonian age closed with an epoch of great disturbance along the eastern border. The rocks were uplifted at various angles previous to the deposition of the carboniferous strata. The rising of Maine above the sea was probably completed during this age.

DEW, THOMAS RODERICK, 1802-46; b. Va.; graduate of William and Mary college, professor of moral science in that institution, and president, 1836. In 1838, he published an essay on *Slavery*, which is said to have put a stop to a movement then assuming considerable proportions, to proclaim emancipation in Virginia. His most important work is a *Digest of the Laws, Customs, Manners, and Institutions of Modern Nations*.

DEWEES, WILLIAM POTTS, 1768-1841; b. Penn.; a physician. He selected obstetrics as his specialty, in which he won much reputation. He was professor of the diseases of women and children in the university of Pennsylvania. Among his publications are *System of Midwifery*; *Treatise on the Physical and Medical Treatment of Children*; *Treatise on the Diseases of Women*; and *Practice of Medicine*.

DEWEY, CHESTER, D.D., LL.D., 1781-1857; b. Mass.; a botanist, professor of natural philosophy in Williams college; in 1850, was appointed to the chair of chemistry in the university of Rochester.

DEWEY, ORVILLE, D.D., b. Mass., 1794; graduate of Williams college, and divinity student at Andover. He preached in Boston for two years as assistant to Dr. Channing, forming a friendship which was only broken by death. In 1823, he became pastor of the Unitarian church in New Bedford, remaining there ten years. He went to New York in 1835, and while there secured the building of the "Church of the Messiah." About 1844, he quitted the pulpit and lectured in various parts of the country on "The Problem of Human Life and Destiny," and on other subjects. Among his works are

Letters on Revivals; Discourses on Human Nature; Discourses on Human Life; Discourses on the Nature of Religion; The Unitarian Belief; etc.

DEWITT, a co. in central Illinois, intersected by the Illinois Central and the Indianapolis, Bloomington, and Western railroads; 675 sq.m.; pop. '70, 14,768. It has a level prairie and forest surface. Coal is the chief mineral product, and agriculture the main business. Co. seat, Clinton.

DEWITT, a co. in s. Texas, on the Guadalupe river; 898 sq.m.; pop. '70, 6,443—1757 colored. It has a rolling and hilly surface and fertile soil. Productions, corn, wool, butter, and cotton. Co. seat, Clinton.

DE WITT, THOMAS, D.D., 1791–1874; b. N. Y.; graduate of the theological seminary in New Brunswick, N. J., 1812, and entered the ministry of the Reformed Dutch church. He became minister of the collegiate church in New York, 1827, and remained so all his life, a pastoral service of 47 years. He was thoroughly learned, and held many important positions, among them president of the New York historical society, and of the New York tract and mission society. He was one of the few remaining of the Reformed church clergy who could preach in the Dutch language.

DEXTER, HENRY, a sculptor, b. N. Y., now residing in Massachusetts, who has done some good work. In youth he was a blacksmith. Two of his works are "The Young Naturalist," and "The First Lesson."

DEXTER, HENRY MARTYN, D.D., b. Mass., 1821; a graduate of Yale, and of Andover theological seminary; Congregational pastor in Manchester, N. H., and Boston. He was one of the editors of the *Congregational Quarterly*, and in 1867 was editor-in-chief of the *Congregationalist*, Boston. Besides *Street Thoughts*, *Twelve Discourses*, and various other writings, he has published *Congregationalism*, an authentic work concerning both the principles and the usages of the churches of that order. His latest issue is *History of the Congregationalism of the last Three Hundred Years, as seen in its Literature*. This work contains an invaluable bibliography of Congregationalism, with 7,250 names of publications. As a historical scholar, industrious and keen, he occupies the first place in the department which he has chosen—pressing research to its furthest practicable point, securing accuracy in numberless details, then classifying and analyzing with a critical judgment which unfolds the vital issues.

DEXTER, SAMUEL, LL.D., 1761–1816; b. Boston; graduate of Harvard and a lawyer. He was in the state legislature, and in congress both as representative and senator. In 1800, he was appointed secretary of war, and the next year secretary of the treasury. He was a candidate for governor of Massachusetts, 1814, but was defeated by his republican opponent. He was the president of the first "temperance society" in his state.

DEXTER, TIMOTHY, 1747–1806; b. Mass.; a merchant who rose to great affluence; but memorable chiefly for his eccentricities. He assumed the title of lord Timothy Dexter. Having an itch for authorship he published *A Pickle for the Knowing Ones*. Being troubled by his printers about punctuation, he retaliated by writing a pamphlet without a comma or any other point, but at the end he put half a page of points in a mass, inviting his readers to "pepper the dish to suit themselves." He also organized his own funeral procession in the most elaborate and extensive manner.

DIADELPHIA, the 17th class of the Linnæan system, comprising plants of which the filaments are united in two sets of brotherhoods.

DIAGOMETER, a kind of electroscope, in which a dry pile is employed to measure the amount of electricity transmitted by different bodies, or determine their conducting power. Used to detect foreign mixture in olive oil.

DIAGRAM, a figure so drawn that its geometrical relations may illustrate the relations between other quantities. The area of a rectangle is the product of its length and breadth; the diagram of the rectangle becomes the visible symbol, corresponding to the equation $a = bl$; by analogy, the rectangle may be used to symbolize any quantity which is the product of two factors. Similarly, a parallelopiped may symbolize any quantity which is the product of 3 factors; e.g., interest, which is the product of principal, rate, and time, $i = p.r.t.$, may be symbolized by a diagram in which principal is figured by length, time by breadth, and rate by height, the total volume representing the interest.

The purpose of ordinary mathematical diagrams is simply illustration, and it is therefore necessary only that the ideas be clearly presented, accuracy of drawing being unimportant. Other diagrams, as some drawn by engineers and architects, are intended to furnish magnitudes or distances by actual measurement, and their execution cannot be too careful. Other diagrams, like those showing electric connections, require only a proper showing of the parts and the methods of uniting them. A profile diagram shows such an outline as would be formed, for example, if a hill were cut through by a vertical plane, and the material on one side of the plane were removed. Evidently a succession of such profiles might be laid upon the same sheet of paper, the lines being distinctively drawn, and the whole would serve to compare several vertical profiles of the same mass. It is not necessary that vertical and horizontal measurements should conform to the same scale, provided that each series of measurements is consistent with

itself. Geographical profiles, which include upon a single sheet the outlines of entire continents or ocean-beds, have usually the vertical measurements on a scale several times greater than that used for horizontal distances; otherwise the diagram would be made inconveniently long, or the heights would be inconspicuously small. Yet, the impression left by such a diagram is often mischievous, especially upon the illiterate. A topographer's contour map exhibits a series of curves, such as would be formed if a series of horizontal sections were made, and the outlines carefully laid down upon paper. The drawing may be understood to show the horizontal projections of the contour lines upon a surface parallel to the system. In the representations of parts of machinery, particularly those designed to guide workmen in construction, several connected views of the same object are required, each view giving some information which the others cannot furnish. Suppose three planes perpendicular to each other, like the bottom, one side, and one end of a rectangular box, and let an object, as a hexagonal nut, be placed within the triedral angle thus formed. Looking from the front, we see one image of the nut projected against the back of the box; from the side, a different image is seen against the end of the box; from above, a third form appears against the bottom of the box; while from one or other of these figures all the measurements of the nut may be obtained. If now the end of the box were swung outward into the plane of the back of the box, and then both together were laid back into the plane of the bottom, we should have the three co-existent drawings in one plane, and they may be transferred to, or be constructed on, one sheet of paper. In many cases the same points will find representation upon each of the three diagrams, and the fact may be indicated by using the same letter for a point wherever it occurs; while the eye may be led from one position of it to another by lines, conventionally drawn, as fine, or dotted, or broken, to show that they are merely guides and not parts of the diagram.

Many devices have been invented by which diagrams illustrating natural phenomena may be automatically described. Let us suppose that a spring dynamometer is placed where it may receive the draft of a horse when moving a carriage. Let the movement of the spring be shown by an index whose motion is back and forth along a line in the direction of the draft. Fix a pencil to the index, and let its point rest upon a sheet of paper on a plane or a cylinder which moves at a uniform velocity in a direction perpendicular to the motion of the index. The combined movements of the pencil and the paper beneath it will trace a line more or less irregular. If the force of draft were unvaried, the pencil would remain at a constant distance from the edge of the paper, and the trace would be parallel to the edge. If the paper does not move and the pencil varies, the line will be perpendicular to the edge. If both move, and the pencil be obedient to a diminishing force, the trace will be oblique, approaching one edge; while if the force increase, the oblique trace will diverge from the same edge. Such mechanism is often arranged for instruments which indicate meteorological changes, as the force and direction of winds; or the pulsation of the arteries, as in the sphygmograph; or the movements of a clock, combined with the observations of an astronomer, as in the chronograph; applicable also to many physical problems. An application of the same principle has great importance in the indicator diagram, by which the pressure of the steam in the steam-engine and the work done by each stroke of the piston, becomes a matter of record for investigation. The paper moves with the movement of the piston, both in its excursion and return; the pencil moves at right angles to the direction of the motion of the paper, under the influence of the steam-pressure; and the diagram drawn shows for each instant of the stroke the volume and pressure of the steam, while the total area of the diagram indicates the amount of work done.

DIAL, THE, a magazine founded, 1840, in Boston, to represent what was then known as the "transcendental" school of thought in philosophy and religion. It was continued only 4 years, first under the editorship of Margaret Fuller, assisted by George Ripley and Ralph Waldo Emerson; afterwards under Ripley's editorship. It was distinguished for the boldness and ability with which it announced and defended theories of men and society then quite novel. Many able writers contributed to its pages.

DIANA, TEMPLE OF, at Ephesus, a magnificent structure built at the public charge, and recorded one of the seven wonders of the world. Chersiphron was the chief architect. According to Pliny, 220 years were spent before it was completed. It was 425 by 225 ft., covering more than two English acres, supported by 127 columns of white marble, 60 ft. high, each weighing 150 tons, and presented by as many kings. On the night of the birth of Alexander, it was fired by Erostratus, an obscure person, who did it solely to secure immortality for his name, and ever since "the aspiring youth who fired the Ephesian dome outlives in fame the pious fool who built it." Having been rebuilt, it was again destroyed by the Goths, 256 A.D.

DIANE DE POITIERS, 1499-1566; Duchess of Valentinois and mistress of Henry II. of France. When but 13 years of age she was married to the count of Maulvner, grand seneschal of Normandy, by whom she had two daughters. Her father was condemned to death for favoring the escape of the constable de Bourbon, but her tears and her beauty so prevailed with Francis I. that the father's life was spared. She was a widow 40 years old when she became the mistress of Henry (then dauphin), who was but half her age. At that time the duchess d'Etampes was the favorite of Francis, and

the two women ruled the court; but when Henry became king, Diane was the real ruler, and at once sent her rival into exile. Notwithstanding the beauty and the rights of his wife, Henry was controlled by Diane during his whole reign. After his death she disappeared from public sight.

DIATHERMANCY, a word used to express that quality in bodies by which rays of heat are allowed to pass through them; in other words, it may be called "transparency" to heat. More correctly speaking, D. has the same relation to radiant heat that transparency has to light. Bodies which have the property of D. are called diathermanous bodies. The earliest observers of the phenomena of D. supposed that the diathermanous body absorbed the rays of heat and then gave them out; but the fallacy of this idea was shown by Prévost, who ignited substances by rays of heat after passing them through ice. The phenomena of D. have, however, been more extensively examined by Melloni, Tyndall, Bunsen, Kirchhoff, and Balfour Stewart. The experiments of Melloni, who was the pioneer in the investigation, were of a brilliant character, and the apparatus used by him is a good example of that which has been used so effectively of late years in the rapid advancement of modern science. The thermoelectric pile of Nobili was employed to measure the rays of heat, and compare those which were passed through different substances with those passed through air alone. He found, among other things, that rock-salt was almost perfectly diathermanous; there was a loss of only 7.7 per cent, which he attributed to reflection. The following table shows the D. of various solids, and also that their D. varies with the intensity of the heat which is the source of the rays. The substances were $\frac{1}{16}$ of an in. thick.

Substances.	Locatelli Lamp.	Incandescent Platinum.	Copper at 752° F.	Copper at 212° F.
Rock-salt.....	92.3	92.3	92.3	92.3
Fluor-spar.....	72	69	42	33
Beryl.....	54	23	13	0
Iceland spar.....	39	28	6	0
Glass.....	39	24	6	0
Rock-crystal.....	38	28	6	3
Smoky quartz.....	37	28	6	3
Carbonate of lead.....	32	23	4	0
Sulphate of baryta.....	24	18	3	0
Feldspar.....	23	19	6	0
Borate of soda.....	18	12	8	0
Selenite.....	14	5	0	0
Alum.....	9	2	0	0
Ice.....	6	0.5	0	0

The equal D. of rock-salt to the rays of heat of different degrees of intensity as shown in the above table was taken by Melloni as evidence that its D. was perfect. Rays of very low refrangibility, however, will not all pass through rock-salt. Fluor-spar is seen to be comparatively diatheomanous, but Iceland-spar and glass show very great variation in D. to rays of different intensity. Feldspar does not vary much in property from them, but alum and ice are almost completely *atheomanous*. The following list shows the percentage of rays transmitted through liquids, held in glass cells, $\frac{1}{16}$ of an inch thick:—Bisulphide of carbon, 63; bichloride of sulphur, 63; oil of turpentine, 31; olive-oil, 30; naphtha, 28; oil of lavender, 26; sulphuric ether, 21; alcohol, 15; acetic acid, 12; distilled water, 11.

After rays of heat have been passed through a body, it will then pass through a second body of the same kind, a phenomenon which might be expected from the nature of radiation. The rays being already sifted, and those transmitted which the molecular structure of the body will allow to pass, they possess the wave-lengths required to make their way between the molecules of the medium. Another quality rather more remarkable, which bodies possess, is, that they are *atheomanous* to rays of heat which are generated in the same substance. Thus rock-salt is nearly *atheomanous* to heat radiated by rock-salt. The absorbing and radiating powers of bodies are reciprocal and equal; therefore the D. of a body is inversely proportional to its radiating power. The investigations of Tyndall on the D. of various liquids and gases possess great interest. He found that as a rule elementary bodies were more diatheomanous than compound bodies. A solution of iodine in bisulphide of carbon placed in a prism of transparent rock-salt was found to transmit 99 per cent of all the rays of heat emitted by a non-luminous body. Elementary gases and their mixtures were found almost perfectly diatheomanous, while many compound gases were diatheomanous only to rays containing much light. The amount of heat transmitted by nitrous oxide gas is only $\frac{1}{250}$ th of that which will pass through dry common air, a proof that the atmosphere is merely a mechanical mixture. The following list shows the relative absorbing power of various gases, or their D. in inverse proportion: Air, 1; oxygen, 1; nitrogen, 1; hydrogen, 1; chlorine, 39; hydrochloric acid, 62; carbonic oxide, 90; carbonic acid, 90; nitrous oxide, 355; marsh gas, 403; sulphurous acid, 710; olefant gas, 790; ammonia, 1195. These gases are all perfectly diatheomanous to luminous heat. The above numbers were obtained only

with heat of low refrangibility. These gases were held in tubes of rock-salt. If glass had been used, it would already have sifted out all the rays to which these gases are atheomanous, and the results above indicated would not have been obtained. Ozone, which is an allotropic condition of oxygen (q.v.), was found to be very atheomanous. But on heating the ozone it became perfectly diatheomanous like oxygen. This proves that ozone is not, as some have supposed, a compound of oxygen and hydrogen, because the heating would produce some vapor, and this would prevent the contents of the tube from being diatheomanous, for aqueous vapor was found to be quite opaque to the dark rays of the spectrum, although diatheomanous to the luminous rays. The subject of D. has much interest in relation to the study of meteorology, and the effects of moisture on climate.

DIATON'IC SCALE OF COLORS, the seven primary colors of a solar spectrum, or rather the spaces occupied by them, which Newton supposed to be of the same length as the strings that sound the diatonic scale in music. The theory is not well founded.

DIBRANCH'IATES, a division of cephaloid mollusks, having two gills or branchiæ, an ink-gland, and nearly always a rudimentary internal shell, such as the cuttle-fish, the octopus, the squid, and the argonaut, and the extinct belemnites. The female argonaut has a single-chambered shell not connected with the body, for the protection of her eggs. With this exception, they are naked.

DICÆ'UM, a genus of beautiful birds, which are best known in India and Australia. Their nests are purse-shaped and made from the down of plants. They fly with great rapidity, and are remarkable for their sweet and long-drawn-out notes.

DI'CAST, a body of 6,000 Athenian citizens chosen annually by lot from the whole people, except slaves, to assist in the administration of justice. They were divided into 10 sections, each section having the powers and performing the duties of a court of justice. The evidence in a cause was taken beforehand, and the members of the D. were kept in ignorance of the cases to come before them, being sworn, as jurors are in the present age, to decide according to the law and the facts.

DI'CE, the goddess of justice in Greek mythology, daughter of Zeus and Themis, and sister of Eunomia. The tragedians represent her as an avenging and rewarding deity.

DICEN'TRA, the name of certain showy herbaceous perennials found in the United States and elsewhere. A curious specimen is known by the name "Dutchman's breeches," because the corolla resembles that article of attire. The flowers are cream-colored, tipped with white. Another species is called "squirrel corn," its tubes resembling maize. It has fragrant flowers, of greenish white tinged with red, and is found in rich forest-lands. There are other varieties, but the most beautiful is an importation from Japan, and is popularly known as "the bleeding heart." It has large rosy blossoms, each flower is an inch long, and its blossoming continues for several weeks.

DICHOT'OMY, in anthropology, is the name given to the theory that considers man as having a twofold nature, physical and spiritual, or, in popular language, as body and soul. In this it is opposed to *trichotomy*, which makes a triple division—body, soul, and spirit: giving the name "soul" to all, besides the body, which man has in common with brutes, e.g., certain instincts, affections, and rational faculties; and using "spirit" to designate that in man in which his morality and immortality inhere, and by which he is distinguished from the other animals. See SOUL, *ante*.

DI'CHROITE, or I'OLITE, a silicate of magnesia, iron, and alumina, found in prisms, and sometimes used as a gem because of its changeable colors.

DICKINS, ASBURY, 1773-1861; son of John, the Methodist minister. In 1801, he was associated with Joseph Dennie in the *Portfolio*, a weekly publication. He spent some years in Europe, and on return was given a place in the treasury department, and afterwards in the state department, where he was acting secretary. In 1836, he was chosen secretary of the United States senate, and filled the office 25 years, until his death.

DICKINS, JOHN, 1747-98; a native of London, educated at Eton. He came to America before the revolution, and was one of the most zealous and efficient promoters of the Methodist Episcopal church in the country. He preached in Virginia and North Carolina, and in 1783, took charge of the John-street church in New York city. In 1789, he was stationed in Philadelphia, and there established the "Methodist Book Concern," afterwards removed to New York.

DICKINSON, a co. in n.w. Iowa, on the Minnesota border; 430 sq.m.; pop. '75, 1748. Spirit lake occupies a considerable part of its area. Agriculture is the principal business. Co. seat, Spirit Lake.

DICKINSON, a co. in central Kansas, on the Kansas river, crossed by the Kansas Pacific railroad; 846 sq.m.; pop. '78, 10,856. The surface is chiefly prairie and fertile, producing wheat, corn, oats, etc. Co. seat, Abilene.

DICKINSON, ANNA ELIZABETH, b. Philadelphia, 1842. Her father died when she was but two years old, and she received a rudimentary education in a Quaker school.

When but 14, she wrote for the *Liberator* an article on "Slavery." At 17, she taught school in Bucks county. The next year she made her first speech at a meeting of Progressive Friends (Quakers) in Philadelphia, her subject being "Woman's Rights and Wrongs," and thenceforward she was a frequent speaker, chiefly on total abstinence and slavery. Near the close of 1861, she added politics, and strongly supported the war for the union. Of late years she has devoted her attention to lecturing and to the drama, writing *A Crown of Thorns*, and *True to Herself*, and acting in these plays with moderate success.

DICKINSON, JOHN, LL.D., 1732-1808; b. Md., educated in London, a lawyer in Philadelphia; deputy to the first colonial congress, and a member of the continental congress of 1774, to which body he presented several important papers. He spoke against the declaration of independence, deeming it premature, and was one of the few members who did not sign that document. He was representative from Delaware in congress in 1779. In 1783, he founded Dickinson college, Carlisle, Penn., to which he gave a liberal endowment.

DICKINSON, JONATHAN, 1688-1747; b. Mass.; graduate of Yale. He was for 30 years a Presbyterian minister in Elizabethtown, N. J., and was in high repute in all the region. In 1746, he was elected president of the college of New Jersey. He wrote a number of theological works.

DICKINSON COLLEGE, at Carlisle, Pa., was established as a Presbyterian institute, 1783, but passed under Methodist control in 1833. It was named for John Dickinson, one of its principal founders. It has a productive endowment of about \$215,000, with an annual income of from \$14,000 to \$15,000. The campus embraces about nine acres, with a beautiful growth of trees. The buildings, three in number, are of stone, substantial, commodious, and well adapted to their purposes. The apparatus for illustration in scientific studies is valuable, and annually increasing. The astronomical observatory is provided with an achromatic telescope, having an object-glass of five inches, and a focal distance of seven feet, equatorially mounted, and furnished with right ascension and declination circles. There is a museum of natural history and geology, and a library of 28,458 volumes. The old classical curriculum is maintained, with allowed divergencies in junior and senior years in favor of scientific and theological students. All the students physically competent are under military instructions and drill. There is a preparatory school under the immediate control of the faculty. The number of professors (1880) is 12; of the students, 120. President, J. A. McCauley, D.D. Among the eminent alumni may be mentioned president Buchanan, chief-justice Taney, and postmaster-general Creswell.

DICKSON, a co. in n. Tennessee, on the Cumberland river and its affluents, intersected by the Nashville and Northwestern railroad; 650 sq.m.: pop. '70, 9,340-1677 colored. It has a rolling surface and fertile soil. The Cumberland river is navigable for steamboats. The productions are corn, tobacco, etc. Co. seat, Charlotte.

DICKSON, SAMUEL HENRY, LL.D., 1798-1872; a physician, b. S. C.; graduate of Yale, 1814; studied medicine in the university of Pennsylvania. In 1824, he was appointed to the professorship of the institutes and practice of medicine in the medical college of Charleston. In 1847, he was professor of the practice of medicine in the university of New York. In 1858, he accepted a similar chair in the medical college in Philadelphia. He published many volumes and papers on medical subjects.

DICTYS OF CRETE, one of the early historians from whom certain Roman writers imagined that Homer derived material for the *Iliad* and the *Odyssey*. According to an introduction prefixed by an unknown writer to the Latin translation entitled *Dictys Cretensis de Bello Trojano*, the author followed Idomeneus, king of Crete, in the Trojan war; the manuscript of his work, written in Phœnician characters, was found in his tomb at Gnosus at the time of an earthquake in the 13th year of Nero's reign, and translated into Greek by Nero's order. A Latin version of the first five books is all that has come down to us; but this is generally regarded as a forgery. The main interest of the work consists in the fact that, with the work of Dares, it was the medium through which Homeric legends were introduced into the literature of the middle ages. (From *Encyclopædia Britannica*.)

DIDIUS SALVIUS JULIANUS, MARCUS, for a brief period emperor of Rome, under the name of Marcus Didius Commodus Severus Julianus. He was quæstor, ædile, and prætor; commanded a legion in Germany, and was governor of Belgic Gaul, and afterwards of Dalmatia and lower Germany. He was consul and proconsul in Africa, and governor of Bythinia in Asia Minor. When Pertinax was assassinated, the throne was offered to the highest bidder by the prætorians, and Didius bought it, thus becoming emperor; but whenever he appeared in the streets he was greeted with the epithets of "robber" and "parricide." The legions abroad did not recognize him, and proclaimed Septimus Severus as the true emperor. Severus marched to Rome and was recognized by the senate. Didius was deserted, and after two months' reign was killed by a soldier.

DIDRON, ADOLPHE NAPOLEON, 1806-67; a French archæologist. By the advice of Victor Hugo he turned his attention to Christian archæology, and examined nearly all the old church edifices of France. In 1839, he went to Greece to study the eastern

churches. In 1844, he started a periodical, *Annals of Archaeology*, devoted to his favorite subject, and was the editor until his death. In 1845, he established in Paris a special archaeological library, and at the same time a manufactory of painted glass. In the same year he became a member of the legion of honor. His most important work is *Christian Iconography*.

DIDYMUS, OF ALEXANDRIA, 309-394; an ecclesiastical writer. Although he became blind at the age of four, before he had learned to read, he succeeded in mastering all the sciences then known, and on entering the church was placed at the head of the Alexandrian school of theology. Most of his works are lost, but we possess a translation by Jerome (one of his pupils) of his treatise on the Holy Ghost, and a translation by Epiphanius of his comments on the canonical epistles. A treatise against the Manichæans in Greek is also extant.

DIEBITSCH-SABALKANSKI, HANS KARL FRIEDRICH ANTON, Count, 1785-1831; Count von Diebitsch and Narden, a Russian field-marshal, native of Silesia. At the age of 12 he entered the Prussian army, but left it four years later for the Russian service. He was wounded at Austerlitz, fought at Eylau and Friedland, being promoted to captain after the Friedland conflict. In 1812, he distinguished himself by the re-capture of Polozk, and by a defense which saved Witgenstein's corps, which was then in retreat. He was made maj.gen., and with gen. Yorek took possession of Berlin. After the battle of Lutzen he was sent to Silesia, and had a share in negotiating the secret treaty of Reichenbach. After the battle of Leipsic, he was made lieut.gen. In 1814, he urged the march of the allies on Paris, for which the emperor conferred on him the order of St. Alexander Newski. In 1815, he married, attended the congress of Vienna, and was made adjt.gen. to the emperor. He was present at Alexander's death at Taganrog. The emperor Nicholas made him baron and count. In the Turkish war, 1828, he had the chief command, took Varna, crossed the Balkans, and made peace at Adrianople. The crossing of the Balkan mountains was commemorated in the addition of *Sabalkanski* to his name, and his elevation to the rank of field-marshal. On the outbreak in Poland in 1830, he was given the chief command. He died of cholera in June of the next year.

DIEDENHOFEN, called by the French Thionville, a t. in Germany on the Moselle, and the railroad from Metz to Luxemburg, 15 m. n. of Metz; pop. '71, 7,155. It has a botanic garden, a gymnasium, and many manufactories. The Carlovingian rulers sometimes resided here. Subsequently it belonged successively to Luxemburg, Burgundy, Austria, and Spain. In 1643, it was annexed to France. In 1870, it was taken by the Germans, and by the treaty of 1871, was annexed to Germany.

DIESKAU, LUDWIG AUGUST VON, 1701-67; a German soldier who served in the French army, adjutant to marshal Saxe, whom he accompanied in the campaigns in the Netherlands, becoming brig.gen. in 1748. He was sent to Canada in 1755, to command the French troops. With a force of 200 regulars, 600 Canadians, and 600 Indians, he moved up lake Champlain to attack fort Edward. When within 2 m. of the fort he first apprised his troops of his intention, but the Canadians and Indians, fearing the English cannon, declined. But on Sept. 8, 1755, the attack was made. The French marched along the road directly upon the English center, halting 150 yards from the breastworks. The French regulars made the central attack, while the Indians and Canadians dispersed on the English flanks. As soon as the English artillery began to play the Canadians fled to the swamps, and Dieskau was compelled to order a retreat, which was in fact a rout. The baron, who had received a wound in the leg, was found leaning against a stump, entirely alone. While feeling for his watch, an English soldier, suspecting him to be reaching for a pistol, fired into his hip, and he was taken to the fort a prisoner. He was liberated in 1763, and returned to Paris, where he died.

DIESTERWEG, FRIEDRICH ADOLF WILHELM, 1790-1866; a German teacher educated at Tübingen. In 1832, he was made director of the seminary for teachers of the Berlin city schools, which charge he held till 1850. He wrote many text-books on mathematics, geography, etc., and manuals for teachers, all of which have wide popularity. He was an advocate of the theories of Rousseau, Pestalozzi, and modern liberalism in general.

DIET, the assembly of the German states, a body of very ancient origin, in which the monarch formerly deliberated with his subjects upon measures proposed for the interests of the empire. It was a feudal, not a representative, body. When feudalism was destroyed it became a congress of princes, the emperor no longer presiding in person but by commissioners, and the princes sending envoys. The emperor was, theoretically at least, elected by universal suffrage, the chief men naming the candidate and the people ratifying their choice. The forms and rules of election were settled by the Golden Bull of 1356. The diet was constituted of the electoral college, the princes of the empire spiritual and temporal, and the free imperial cities. The electoral college was composed of three archbishops, representing the German church, and four secular electors. The princes, save in the matter of electing an emperor, had the same rights as the electoral college. The powers of the free imperial cities were quite limited. Each of the three colleges voted separately. When they agreed on a measure it was submitted

to the emperor for ratification or for rejection, but he had no power to modify it. No measure affecting the welfare of the empire could be passed without the assent of the diet. The regular meetings were held twice a year. After the close of the thirty years' war the power of the body declined, until, in the words of Frederick the great, it became "a mere shadow, a congress of publicists more busied with forms than things, like dogs who bay the moon."

DIETERICI, KARL FRIEDRICH WILHELM, 1790-1859; a native of Berlin, educated at Königsberg, devoting his attention chiefly to mathematics. He was an engineer in Blücher's army, 1813-15, and in 1820 was engaged in the ministry of public instruction. In 1834, he became professor of political science in the university of Berlin, and in 1844, was placed at the head of the statistical bureau. He published a number of important works on political economy and statistics.

DIEU ET MON DROIT (God and my right). The parole of Richard I., at the battle of Gisors, 1198, signifying that he was not subject to France, but owed his power to God alone. They were victorious over the French, and the battle word was adopted as the motto on the coat of arms of England. During the reign of queen Anne, *Semper eadem* ("Always the same") was substituted, but the former motto was restored by her successor.

DIFFERENTIATION, in mathematics, the process of finding the differential of a function. When a function of two or more independent variables is differentiated as if all the variables but one were constants, the operation is called partial differentiation.

DIGBY, a co. in s.w. Nova Scotia, on the bay of Fundy; 1300 sq.m.; pop. '71, 17,027. It has a rough surface, with numerous mountains, valleys, and lakes, and some small rivers. Digby is the chief town.

DIGBY, KENELM HENRY, son of the Rev. William Digby, dean of Clonfert, b. 1800; educated at Cambridge, and graduated in 1823. He soon afterwards became a convert to the Roman Catholic church and began to write semi-religious works, among which are *Mores Catholicæ, or Ages of Faith; Compitum, or the Meeting of Ways at the Catholic Church; The Broad Stone of Honor, or Rules for the Gentlemen of England; Evenings on the Thames;* etc.

DIGGES, an English family of note in the 16th and 17th centuries. LEONARD, b. 1574, wrote *Tectonicum*, briefly showing the exact measuring and speedy reckoning of all manner of lands, squares, timbers, stones, steeples, etc.; *Pantometria*, a practical geometrical treatise; and *Prognostication Everlasting of Right Good Effect, or Choice Rules to Judge the Weather by the Sun, Moon, and Stars*. THOMAS, son of Leonard, was an Oxford graduate, and a soldier. He wrote on mathematics and astronomy. Sir DUDLEY, son of Thomas, was the author of *Rights and Privileges of the Subject*, and the *Compleat Ambassador*. His son DUDLEY, d. 1642, was the author of *Unlawfulness of Subjects taking up Arms against their Sovereign*.

DIGNITARY, in canon law, originally signified an ecclesiastic of superior rank than a priest, such as bishop, dean, etc.; it now includes also canons and prebendaries.

DIKE. See DYKE, *ante*.

DIKE, in geology. See DYKE, *ante*.

DILKE, Sir CHARLES WENTWORTH, 1810-69; a native of London, educated at Cambridge. He assisted his father, the editor of the *Athenæum*, in literary work, and gave much attention to the learned societies. He was a zealous promoter of the great exhibition of 1851, at the close of which the queen offered him knighthood, which he declined. He was one of the English commissioners to the New York exhibition of 1853, and prepared the report upon it. He was also one of the five royal commissioners for the exhibition of 1862. In 1865, he was a member of parliament, and in 1869, representative of England at the St. Petersburg horticultural exhibition. He was knighted by the queen soon after the death of the prince consort.

DILKE, Sir CHARLES WENTWORTH, b. 1843; son of sir Charles Wentworth; an English politician, author, and lawyer; educated at Cambridge. He has traveled extensively in the United States, Canada, and the British countries in the east, and embodied his observations in *Great Britain; a Record of Travel in English-speaking Countries during 1866-67*. In 1868, he was chosen a member of parliament. After his father's death he became the editor of the *Athenæum*, and succeeded to the title. In politics he is a strong republican leader.

DILLEN, or DILLENIIUS, JOHANN JAKOB, 1687-1747; a German botanist, educated at Giessen. He went to England in 1721, and was a co-laborer with William Sherard, the most eminent English botanist of the time. In 1728, he was appointed professor of botany at Oxford. He wrote many works upon his favorite themes, some of which received high praise from Linnæus.

DILLINGEN, a t. in Bavaria on the Danube, 24 m. n.w. of Augsburg; pop. '75, 5,029. Its principal buildings are the royal palace, the royal gymnasium and Latin school, two Episcopal seminaries, a Capuchin monastery, a Franciscan nunnery, a deaf and dumb asylum, and some fine churches. The principal occupations are ship-build-

ing, the shipping trade, and the manufacture of paper, cloth, and cutlery. The place was taken by the Swedes in 1632 and 1648, by the Austrians in 1702, and by the French in 1800.

DILLMANN, CHRISTIAN FRIEDRICH AUGUST; b. 1823; a native of Württemberg, educated at Tübingen. In 1854, he was appointed professor of oriental languages at Kiel, and in 1864, he accepted a call as professor of theology at Giessen. In 1869, he succeeded Hongstenberg in the university of Berlin, as professor of Old Testament exegesis. He is noted chiefly for researches in the Ethiopic language, of which he has published a grammar, dictionary, and other works.

DYMAN, JEREMIAH LEWIS, D.D., b. R. I., 1831; a graduate of Brown university and Andover theological seminary. After traveling abroad, he was settled over the First church (Congregational), Fall River, and in 1856, over the Harvard church in Brookline, Mass. He was appointed to the chair of history and political economy in Brown university in 1864.

DYNABURG, a fortified and important military station in Russia on the Dwina, reached by the St. Petersburg and Warsaw railroad, 120 m. s.e. of Riga; pop. '69, 29,613. It has many manufactories, and a flourishing trade.

DINARCHUS, the orator, son of Sostratus, b. Corinth, 361 B.C. At 25 he was a writer of speeches for the law courts. He had been a pupil of Theophrastus, and early gained oratorical repute. In 324 B.C., he wrote three or more of the speeches in the case of the prosecution of nine men for taking bribes from Harpalus, the fugitive treasurer of Alexander. The speeches were "Against Demosthenes," "Against Aristogiton," and "Against Philocles."

DINDORF, WILHELM, b. 1802; a German critic and philologist. He was a zealous student of classical literature, and became professor of literary history. He has published critical editions of Demosthenes, Aristotle, Sophocles, Euripides, and Josephus. His editions are held as high authority.

DINGELSTEDT, FRANZ VON, b. 1814; a German poet, native of Hesse. In 1843, he was librarian to the king at Stuttgart; became superintendent of the royal theater at Munich in 1850, director of the court opera at Vienna in 1867, and director of the city theater there in 1871. His early poems were mainly political. At a late period he wrote *Night and Morning*, and the *House of Barneveldt*, a tragedy. He married Jenny Lutzer, a famous singer.

DINICHTHYS (Gr. meaning "terrible fish"), the largest of the fossil fishes of the Devonian formation. Its body, according to Dr. Newberry, was 15 or 18 ft. long, and 3 ft. thick. The jaws were armed with two strong, sharp front teeth, and were also arranged at their joints in such a manner as to act like a pair of shears. This structure has a strong resemblance to the jaws of the lepidosiren, a living fish, the nearest allied to the reptiles. The head and forepart of the body was covered with large plates.

DINOCRATES, a Greek architect of the time of Alexander the great. He applied to the courtiers for an introduction to the Macedonian king, but was put off from time to time with vain promises. Impatient at the delay, he is said to have laid aside his usual dress, besmeared his body in oil in the manner of an athlete, thrown a lion's skin over his shoulders, and, with his head adorned with a wreath of palm branches, and a club in his hand, made his way through a dense crowd which surrounded the royal tribunal to the place where the king was dispensing justice. Amazed at the strange sight, Alexander asked him who he was. He replied that he had come into the royal presence to make known a scheme which would be worthy of the consideration of the greatest monarch in the world. Out on Mt. Athos, a mountain rising like a pyramid to a height of 6,780 ft., topped with a cone of white limestone, he proposed to construct the gigantic figure of a man, holding a large city in his right hand, while in his left he held a gigantic tank large enough to contain all the water from the brooks in the peninsula. The story goes that the king was not displeased with the idea, though thinking it impracticable. Alexander, however, was so delighted with the man, and his bold and daring conceptions, that he carried D. with him on his campaigns against Darius. He was employed by the king to design and lay out the city of Alexandria. The city was founded in 332 B.C., but the untimely death of D. prevented it from assuming the proportions intended by its designer. The Ephesians, whose temple of Diana had just been burnt down, employed him in its reconstruction. But perhaps the most original of all his conceptions was his design for a temple to Arsinoë, wife of Ptolemy II., king of Egypt. The roof of the building was to have been composed of a mass of load-stones, strong enough to hold floating in the air and suspended within the temple an iron statue of the queen.

DINWIDDIE, a co. in s.e. Virginia, between the Appomattox and Nottaway rivers, crossed by the Atlantic, Mississippi, and Ohio, and the Petersburg and Weldon railroads; 540 sq. m.; pop. '70, 30,702—17,664 colored. It has a rolling surface and good soil, producing tobacco, corn, etc. Co. seat, Dinwiddie Court-house.

DINWIDDIE, ROBERT, 1690—1770; native of Scotland; lieutenant-governor of the Virginia colony, 1752—58; in the latter year he returned to England. He appointed

Washington adjutant-gen. of one of the military districts of the colony, and also commissioned him to remonstrate with the French gen. on the Ohio, for invading British possessions. Dinwiddie's arrogance and peculiar ideas concerning his own importance made him very unpopular. When he left the country he was suspected of having appropriated for his own use \$100,000 of the public money.

DIOGENES OF APOLLONIA, flourished in Athens about 460 B.C. He was a pupil of Anaximenes, and a contemporary of Anaxagoras. He believed air to be the source of all being, and all other substances to be derived from it by condensation and rarefaction.

DIOMEDES, son of Mars and Cyrene, king of the Bistones in Thrace. It was this Diomedes, and not the Trojan hero, who fed his mares upon human flesh. After he was slain by Hercules, the mares had the pleasure of eating their master.

DION OF SYRACUSE, 408-353 B.C.; brother-in-law of Dionysius the Elder; an admirer and pupil of Plato. Because of his stern moral character Dion became odious to the king, who banished him, confiscated his property, and gave his wife to another man. Dion made war upon Sicily and defeated the tyrant, but was soon supplanted by the intrigues of Heraclides and again banished. He was recalled soon afterwards, but the people complained of his tyrannical conduct, and he was assassinated.

DIONYSIA, feasts of Bacchus, celebrated especially in Attica. The lesser Dionysia were held in country places in Dec., when the vine was grown. There was a vintage festival, songs, dances, impromptu plays, a phallic procession, and rustic sports. The greater Dionysia were held in Athens in Mar., as a festival of joy for the departure of winter and the promise of summer. The ancient image of the god was conveyed from one sanctuary to another, with a chorus of boys and a procession wearing masks and singing odes. The festival culminated in tragedies, comedies, and satiric dramas, in the great theater of Dionysus.

DIONYSIUS, OF ALEXANDRIA, SAINT, d. 265 A.D., at Alexandria, where he was born. He was of a noble pagan family, but was an early convert to Christianity, and under the tutelage of Origen became a priest, and chief of the Alexandrian school of theology. In 247, he became a bishop. In the persecution of Decius, about this time, he was arrested and condemned to death, but was rescued by peasants, and remained concealed for a year in the Libyan desert. In 257, he was again exiled, but restored three years later. He was a voluminous writer, but most of his works are lost.

DIONYSIUS, or DENIS, 1261-1325; King of Portugal, son of Alfonso III., whom he succeeded, 1297. He married Elizabeth of Aragon. His reign was wise and just, and the beneficial reforms he instituted gained him the title of "father of his country." He built cities and fortifications, and founded the university of Lisbon, the only one in the kingdom.

DIONYSIUS EXIGUUS, a Roman monk of the 6th c., a native of Scythia. He was the compiler of the first regular ecclesiastical code for the western church. He is more widely known in chronology as the founder of the "Dionysian Æra" which was observed by Christians for more than a thousand years. Before this the Christian era had started from the death of Christ; he fixed it as nearly as possible at the time of the birth.

DIONYSUS. See **BACCHUS**, *ante*.

DIOSCORIDES PEDANIUS, a Greek botanist of about the 2d or 3d c. after Christ. He traveled far and wide studying plants, and wrote a famous work on their nature and medicinal qualities. The work is still held in high esteem.

DIOSCURI. See **CASTOR AND POLLUX**, *ante*.

DIP OF THE HORIZON, the angle comprehended between two lines drawn from the point of observation, one horizontal, the other a tangent to the surface of the sea; the apparent angular depression of the visible horizon.

DIPHTHERIA, or **DIPHTHERITIS** (*ante*). This is really a very old disease with a modern name, unfortunate because misleading, and the cause of much inefficient treatment. By many the disease has been regarded as a local more than a general affection, but within the last twenty years thorough study has revealed its nature and causes so that few things are more certain than that it has for many centuries been one of the dangerous diseases of the human race. That its characteristics were always precisely what they now are is not probable, because the sanitary condition of the world centuries ago, when devastating *plagues* swept the face of the earth, would be likely, especially when large numbers of human beings were collected together, to give this disease a more general inflammatory and malignant character. The causes which are now known to produce the disease have always been present wherever the human family has congregated in numbers, and wherever even a few have lived together without regard to cleanliness. It is thought that descriptions of the disease can be traced to a time anterior to Hippocrates (460 B.C.), and there is no doubt of its identity with that described by Aretæus of Cappadocia (100 A.D.), who called it *Ulcus Syriacum* and also *Malum Egypticum*. Several other ancient authorities describe it, but during the dark ages little is recorded that is trustworthy. One of the earliest treatises upon it in mod-

ern times was by Hecker, who gives an account of an epidemic which prevailed in Holland in 1337. Besides the names given it by Aretæus, it has been called *cynanche maligna*, *cynanche gangrenosa* (*cynanche* means, literally, "dog-choke"), putrid fever, malignant inflammation of the pharynx, and putrid sore throat. The last name was the one adopted by the celebrated Dr. John Fothergill in his description of the epidemic which appeared in London in 1745. Some have contended that the disease which he described was malignant scarlet fever, but so accurate an observer and great physician as Dr. Fothergill, drawing the distinctions, as he does, between the diseases, could not have been mistaken. His treatise, published in his works, is in many respects unexcelled. Of course some of the remedies now found most efficient were either not then known, or not obtainable in their best form, but his general treatment was more rational than much of more modern date; indeed it was not greatly different from that which an experienced physician of the present day would employ if limited to the remedies which were then available. The disease is well described by Dr. Samuel Bard of New York, in the first volume of the Transactions of the American philosophical society, in the review of an epidemic which appeared in 1771. The disease did not again attract the special attention of writers until 1818, when Bretonneau published his opinions and gave it the name under which it is now generally known, claiming, in his first papers upon the subject that the disease was at first local, and that the constitutional affection resulted from infection propagated by the local disease. The origin of diphtheria was ascribed by Vogel to the development of a microscopic organism, the *oidium albicans*, but this is also largely developed in Thrush, and is present in various diseased conditions of the mouth and throat. The present doctrine is, simply, that the disease is caused by certain disease germs, but what they precisely are has not been determined. This much is certain—D. is a septic disease, never found where no septic origin can be assigned. Feculent matter, passing through stages of putrefication and fermentation, such as obtains in sewers, cess-pools, and vaults of privies, and all manner of conduits or receptacles of waste matter, and the effluvia engendered in piles and masses of garbage, or of human or animal excrement, are the now recognized causes of diphtheria. Wherever these causes are constant, there the disease is constantly developed and is *endemic*. The only apparent exception to this is that at certain seasons of the year putrescent and feculent matter is liable to develop other diseases, when D. may occupy a more or less subordinate place. Again, there may be times when the septic causes are in abeyance; but when they become active, the disease becomes *epidemic* if the air is sufficiently impregnated with the infectious germs. In regard to the question of contagiousness or infectiousness, the following may be said, premising, however, a few words explanatory of these terms. In many respects contagiousness and infectiousness are synonymous, and some writers use only the former word. But there is this difference—such diseases as scarlet fever and small pox are contagious, and they are communicated through the air as well as by contact. There are other diseases which are contagious only by contact, as the itch. It would be more correct to call itch an infectious disease. Most other diseases which are communicated in the same manner are infectious. It appears, therefore, that there is some confusion in the use of the terms, and it is for this reason that some authorities use only the word contagious. But there are two distinct modes, and some diseases are communicated only by one of these modes; and if we desire to express the difference, the employment of the two terms is convenient, but care should be taken to distinguish clearly what idea it is intended to convey. If D. be a communicable disease, but not in the same manner as scarlet fever, we distinguish the difference by calling the former an infectious disease; and that D. has been communicated by contact there is no reasonable doubt. There have been many instances when diphtheritic expectorations have communicated the disease by being projected into the mouth or eyes of the attendant. Bretonneau and others maintained this. It is a matter of dispute as to whether exposure to the air breathed by patients having the disease is capable of communicating it, but the great mass of authority is now on the side of the affirmative. What is the explanation of this disagreement? The poison of D. is a species of ferment, and like many other ferments, it requires a certain quantity to produce a given effect. The contagious virus of small-pox is different; the minutest quantity, when inhaled, or when introduced by vaccination, being sufficient to propagate itself throughout the system, and there seems to be no provision of nature for its elimination until a crisis is reached. The poisonous principles which propagate some other diseases, when taken into the system do not need to ripen before they are again cast out; the excretory action of the animal economy sometimes removes them as fast as they are received. It is because of this conservative power, this action of the *vis medicatrix nature*, that mankind, as well as the lower animals, have been enabled to exist. We are all the time taking poisons into our bodies, and it is one of the offices of the various organs to remove them by the various processes of excretion. The poisonous principle of ordinary intermittent fever, if received only in small quantities, is readily disposed of, and the system retained in a healthy condition, but if the malarial poison be absorbed faster than it can be carried away, there results a series of morbid phenomena characteristic of this periodical disease. And so it is, most probably, with diphtheria; if the air of a sick-room be loaded with the effluvia from the breath and perspiration of a person laboring under a violent case of the disease, one who should remain in the room only a few moments, would be

likely to receive enough germs of the disease to cause a manifestation of its presence, and if he were to remain a considerable time there would be danger of a serious attack. On the contrary, if the case were a mild one, or if the sick-room were well ventilated and disinfected, and the visitor were in good health, the danger would be slight. It is these varying circumstances which have caused a difference of opinion between different physicians; but the weight of evidence supports the opinion that D. is both contagious and infectious, and in a late work, Drs. Pepper and Meigs of Philadelphia give this as their conclusion.

Although diphtheria (or putrid fever, a more appropriate name, and comprehensive of all the phases of the disease) is eminently a constitutional affection, it is liable to special local manifestations, the latter sometimes apparently predominating. Now, why does it so often have predominating local characteristics? The following is probably the explanation. The attack is usually brought on by a "cold," and if the system be only slightly contaminated at the time, the symptoms are not likely to be alarming, and will readily yield to prompt treatment, but it should always be borne in mind that the disease is exceedingly stealthy and treacherous, and to be watched like a wolf. Again, the system may be considerably loaded with the germs of the disease, although not to the culminating point. Here, also, causes which produce a "cold" will, besides bringing on the general attack, also give rise to violent local symptoms. But when no exciting causes occur to hasten the attack, and the septic poison is being constantly received, there comes at last a time when a fully developed case of putrid fever will make its appearance, a disease of the gravest character, but which may be recovered from.

One of the conclusions which have been arrived at by the medical profession is that those who live in badly ventilated or drained houses are, with perhaps some exceptions depending on the effects of temperature which are not yet well understood, constantly in a condition which renders them liable to a diphtheritic attack of varying importance. It is true that there are physicians who do not like to pronounce certain cases of sore throat as diphtheritic, unless they have more or less of an alarming character, or appear during an undoubted epidemic, but diphtheria is so treacherous a disease that it is not well to strive to balance arguments at the risk of life, especially when observation has almost surely decided the question on the safe side. It is well known that persons are not as likely to take a "cold" on our Pacific coast or in some of our western territories, as in the Mississippi valley, or between it and the Atlantic ocean. It is therefore probable that organic matter has much to do with the development of "colds;" undoubtedly it has with that of influenza. If we call this organic matter zymotic, then we may assume that with the aid of the vitality of the system it works itself out, or recovery takes place without recourse to medicine. Now, in regard to the septic germs of diphtheria, it is known that they are generally present in the effluvia of cess-pools, sewers, and filthy habitations, perhaps more especially developed or active in the temperate and moist weather of spring and autumn, and mild winters. Therefore, it is reasonable to believe that persons inhabiting badly drained localities, where putrescent effluvia more or less pollutes the air, never have inflammatory affections of the mucous membrane of the mouth or fauces, without having it more or less modified by this circumstance. All persons, therefore, who live in houses where the drain-pipes are not properly trapped, and where there is more or less intrusion of sewer gas through the wash-basins, bathtubs, etc., will have reason to suspect that when they have febrile symptoms, alternating with chills, but unlike those of fever and ague, and a feeling of weariness, whether accompanied with pain in the throat, or not, there may be diphtheritic complications. The above symptoms are those of milder cases. The attack, when acute, frequently commences with a decided chill, followed by a high fever. The chill and the fever are characteristic, and generally easy to be recognized by the experienced physician. The pulse, however, affords a still stronger indication, and when taken in connection with the chill and the following fever, and the condition of the throat, together with the surrounding sanitary conditions, is quite diagnostic. It is variable, and soft and weak; sometimes quite full, but easily compressible; sometimes not more frequent than in health, but generally ranging from 100 to 140 beats per minute; sometimes reaching 160, and in children going still higher. The cheeks are often of a bright red color, one cheek often much redder than the other, the latter sometimes being quite pale. There is a fluctuation in the circulation, and also, apparently, a fluctuation in the nervous force of the system. It must not be supposed that the throat affection, even when serious, will be indicated by pain, for there is often found considerable mischief, upon inspection, where the patient suspected nothing of the kind. There may be pain only on swallowing; while on the other hand there may be diminution of sensitiveness, especially in grave cases, when also the muscles of deglutition may be so paralyzed as to interfere with swallowing, and in extreme cases there may be paralysis of different parts of the body, generally affecting one side more than the other; but this condition, caused by the great development and accumulation of poisonous matter, may be relieved by the prompt administration of proper remedies. The disease is, indeed, singular in some respects. Although sometimes perfectly unmanageable, and causing death in a few hours, it is at times, even when violent, easily overcome, if attacked with resolution and courage. The paralysis which sometimes occurs at the commencement of the disease must not be confounded with that which often comes on during convalescence after serious attacks. The breath is always more or less fetid, and in severe cases is very offen-

sive. Sometimes the membranous exudation is extensive, spreading over a considerable portion of the fauces, often causing sloughing, especially when efficient remedies are not employed. The exudation may not be confined to the throat or any part of the air passages, but may form on the mucous membrane of the intestines, and has been recognized in the evacuations of the rectum. It may also form on the mucous membrane of the larynx or wind-pipe, or even pass into the bronchial tubes, and when diphtheritic sputa has been thrown upon the mucous membrane of the eyelids, exudations have developed there. Observation has shown that the range of temperature in the axilla is lower than in other acute diseases. There is usually loss of appetite, with vomiting, and often diarrhea; the latter are unfavorable symptoms. There is more or less delirium in all severe cases, and unless good treatment is speedily adopted the throat is liable to become gangrenous. There is great variableness, no doubt, in the virulence of the poison during different epidemics, and sometimes three fourths of the members of a family will die. The urine, in a majority of cases, at some time during the attack contains albumen, and the symptom is regarded as unfavorable, yet a majority of such cases recover. The neck is often considerably swollen, with considerable inability to move the jaws or to swallow. The tongue and throat are covered with a thickened mucus; the tonsils are generally considerably swollen when the first examination is made, and may have patches of a grayish or yellowish membrane upon them. The membrane, however, is sometimes not seen, either upon the tonsils or other parts of the mouth or throat, till the second day. The tonsils generally increase in size, and sometimes close the entrance to the wind-pipe, and render swallowing very difficult. The color of the parts is also peculiar; indeed, many of the symptoms of D. are peculiarly characteristic, usually making the diagnosis, especially when the history of the person is taken into consideration, easy.

It ought to be more generally known that D. is a disease in which relief must be expected from the use of medicines. It is septic, progressive, and cumulative; and when the system has been fully charged with its germs, it is likely to go to a fatal termination, the functions of the body seemingly participating in furnishing material for the spread of the disorder. The enemy must be repelled by such weapons as are deadly to disease germs. Disinfectants should be freely used, and medicines which keep up the animal strength. A generous diet of easily digested food, such as beef-tea, milk-punch, eggs and wine, boiled rice, and as a beverage, rice-water, with tender beefsteak as soon as the stomach will bear solid food, should be combined with such medicines as quinine and the tincture of chloride of iron. There is great waste of alkaline material in the blood in these cases, and this should be restored by the judicious administration of alkaline carbonates and chlorates. The amount of alcoholic stimulants required is variable; sometimes small quantities only are needed, but frequently they are required to combat the wonderfully depressing influence of the poison, their remedial action being similar to that which they have in cases of bites of poisonous reptiles. It is fortunate that in nearly every case the membranous exudation takes place above the larynx, or in that part of the throat which can be reached by a gargle or a sponge probang. This allows of the application of antiseptics, and no better one can be employed than a solution of carbolic acid, in the proportion of a dram, or a dram and a half, of the pure acid to a quart of water. This should be used as a gargle frequently, every half-hour, hour, or two hours. In young children who cannot gargle, a solution of rather greater strength may be applied with the sponge probang. This will in most cases relieve the local symptoms and cause the disappearance of the exudation in a few days, if the general treatment be judicious. A saturated solution of chlorate of potash may often be employed as a gargle in mild and chronic cases, but will not at all meet the demands of a severe case. What is known as chloride of soda, sold in the shops as Labarraque's disinfecting liquid, when properly diluted forms a good topical application, and before the introduction of carbolic acid, was used with great success, and is still employed by many physicians. The mischievous practice of destroying the exudation, and of course, to some extent, the tissue immediately beneath, with caustic, was in vogue some fifteen or twenty years ago, and the mortality which resulted from this practice was frightful. The application produced a wound in which the disease germs seemed to propagate themselves and enter the system, for the wound, under the circumstances, would not heal or form a protecting plastic membrane such as is developed in the presence of healthy pus. The use of chloride of lime in the sick-room, notwithstanding the denials which have been made of its virtues, has a powerful effect in destroying disease germs, and, as has been shown by experience, will render an apartment occupied by a diphtheritic patient comparatively innocuous, so that he may be nursed assiduously with but little danger to his attendants, especially if they use disinfecting gargles, and give all proper attention to cleanliness.

DIPLOMACY (*ante*), the science which deals with the relations and interests of nations in respect to one another. Diplomatic agents are of the following grades: Ambassadors, ministers plenipotentiary, charges d'affaires, envoys, and consuls. In the United States, these agents are appointed by the president, with the advice and consent of the senate. If a vacancy occurs while the senate is not in session, the agent may enter upon his duties upon the appointment of the president, subject, however, to confirmation or rejection by the senate at a future time. In practice, the secretary of state,

under the direction of the president, takes charge of the diplomatic relations of the government, giving to the agents their instructions and keeping himself in close correspondence with them. In great emergencies it is not unusual for nations to appoint special commissioners to settle a special difficulty, or to draft a particular treaty. In the United States, the necessity and utility of keeping ministers residing at foreign courts has sometimes been questioned; but the practice is continued in the belief that it is favorable to peace between nations by affording facilities for prompt explanations of disputes as they may arise, and also because it is thought that American citizens traveling or residing in foreign countries often need such protection or advice as only a minister or consul is qualified to give. There can be no doubt that diplomatic intercourse, regularly established and maintained, begets between nations sentiments of mutual respect and forbearance, and tends to keep alive that feeling of universal brotherhood which is the richest and ripest fruit of a Christian civilization. It is the duty of a foreign minister to study the institutions, habits, and even prejudices of the nation to which he is accredited, and to keep his own government advised of every movement affecting its peace and welfare. It is also his duty to convey information to foreigners in respect to the government and people of the nation which he represents, in order to abate or remove national prejudices and awaken fraternal feelings. Of late years, American consuls have done the country a valuable service by gathering information as to the productions, manufactures, and trade of foreign nations, and finding new markets for the products of American industry.

DIR'CE, in Greek legend, the personification of a fountain (and stream) at Thebes, from the water of which Hercules derived a part of his strength, and which was usually identified with the fountain of Ares in the legend of Cadmus. Besides the fountain, there was the grove of Dirce, at which sacrifices for the dead and other rites were performed. According to the story, Dirce, the wife of Lycus, king of Thebes, had sorely persecuted Antiope, who at last escaped to Mt. Cithæron, where her twin sons, Amphion and Zethus, were being brought up by a herdsman who was unaware of their parentage. Mother and sons met, but had not recognized each other, till Dirce, who had come to a hill for a Dionysiac ceremony, proposed that Amphion and Zethus should tie Antiope to the horns of a wild bull to be dragged to death. They were about to do so, when the herdsman announced their relationship, and they then tied Dirce to the bull instead. She was dragged over the hill to the fountain into which she was transformed.

DIR'SCHAU, a t. in Prussia, in the government of Dantzic, on the Vistula, a railway junction, 20 m. s.e. of Dantzic; pop. '75, 9,727. There is considerable trade and industrial activity; but the chief claim of the place to attention is the lattice-work iron bridge over the river, built in 1850-57, 2,726 ft. long, with six spans of 410 ft. each. It affords passage for the railway between Königsberg and Berlin, for two ordinary carriage roads, and two sideways for foot passengers.

DISASSIMILATION. See **NUTRITION**.

DISCIPLES OF CHRIST, a denomination of Baptists, organized 1827, who are often spoken of as Campbellites, but prefer to call themselves **THE CHURCH OF CHRIST**. In 1808, Thomas Campbell, a minister of the "Seceders," emigrated from Ireland to the western part of Pennsylvania and was followed, the next year, by his son Alexander. They both earnestly desired reforms in the Christian church conforming it to apostolic precept and practice. Their first step was to gather a small company of disciples for the special study of the Scriptures, with the pldge that, rejecting all human creeds and confessions of faith, they would strictly conform their practice to the teachings of the divine word. This virtual separation from the Seceders was followed by the gathering of a small congregation in Washington co. Penn., known as the Brush Run church, of which Thomas Campbell was an elder, and by which Alexander was ordained to the ministry. After what they regarded as a thorough investigation of the question of baptism, both father and son, with five other persons, feeling convinced that the Scriptures taught the "*immersion of believers*," were, June 2, 1812, immersed by a Baptist minister. In 1815, having increased to such a degree that they numbered 5 or 6 congregations, they united with the Redstone Baptist association, having first stipulated in writing that no terms of union or communion other than the Holy Scriptures should be required. As many of the Baptist ministers were, from the first, dissatisfied with this union the reformed congregations at length withdrew and joined the Mahoney (Ohio) association, the members of which regarded the new movement with favor and finally entered heartily into it. In 1823, Alexander Campbell commenced the monthly publication of the *Christian Baptist*, by means of which, together with public oral debates on baptism and itinerant preaching over large districts, his views were widely diffused among Baptists. Opposition to them on the part of many at length resulted in ecclesiastical action: the Dover association of Virginia, 1827, leading in what soon became a general withdrawal of Baptist fellowship from all who held the views of Alexander Campbell. The reformers, as they were called, then formed a separate organization, and have since rapidly increased, particularly in Kentucky, Ohio, Indiana, Illinois, Missouri, and Virginia. They have churches, also, in Canada, England, Wales, Ireland, and Australia. They now report about 2,000 ministers, 2,400 churches, and 500,000 members in the United States. Rejecting creeds and confessions of faith, as of human origin, they

take the Bible as the sufficient and only authority in matters of faith and practice. Shunning subtle theological speculations, they aim to present Bible truths in Bible terms. This exposed them at first, and in some quarters, to the imputation of holding Unitarian views; but their orthodoxy on this portion of theology is now fully admitted. On the atonement, resurrection, and general judgment they agree with the great body of evangelical Christians. They continue the breaking of bread in commemoration of the Savior's death every first day of the week. They hold that faith and repentance are the divinely appointed pre-requisites for baptism, and that all who do repent and believe may and should be immersed in the name of the Lord Jesus Christ for the remission of sins and reception of the gift of the Holy Spirit. In church polity they are congregational, with three classes of officers: 1. elders, presbyters, or bishops; 2. deacons; 3. evangelists. The last named are the itinerating ministers or missionaries, and are supported by voluntary contributions. Acknowledging their obligation to provide for the wide diffusion of scriptural preaching by well-instructed men, they are zealous in promoting education. They have a university at Lexington, Ky.; and colleges at Bethany, West Va.; Hiram, Ohio; Franklin, Pa.; Indianapolis, Ind.; Eureka, Ill.; and Oskaloosa, Iowa; besides colleges for women and many other schools of high grade.

DISCOVERY, BILL OF (*ante*), commonly used in aid of the jurisdiction of a court of law to enable the party who prosecutes or defends a suit to obtain a discovery of the facts which are material to such prosecution or defense. The plaintiff must be entitled to the discovery which he seeks, and can have a discovery only of what is necessary for his own title, as of deeds under which he claims, but not to pry into affairs of the defendant. The bill must show with reasonable certainty a present and vested title and interest in the plaintiff, and what that title and interest are; must state a case which will constitute just ground for a suit or defense at law, and describe deeds and acts with reasonable certainty. A bill of discovery will not lie in aid of a criminal prosecution, a mandamus, or a suit for a penalty.

DISEASES, DISTRIBUTION OF. It is generally known that the different regions of the earth are subject to diseases deriving their character from local circumstances and conditions, such as latitude, climate, the chemical quality of the soil, elevation of the land above the sea-level, variation of temperature, water distribution, character of the vegetation, and the peculiar habits of the people. The science of nosography in this aspect, however, did not receive much attention before the beginning of the present century, and is still comparatively undeveloped, though something has been done in the way of discovering and classifying facts. It is known that tropical regions are the home of malarial fevers, cholera, and hepatic diseases. This is due in part to the damp soil and decaying vegetation, particularly in the river valleys. The yellow fever of the Mexican gulf, though often aggravated by other conditions, doubtless originated primarily from this cause. In the more temperate zones, typhus, typhoid, intermittent, and scarlet fevers are found. They are, however, for the most part, not so much endemic as epidemic. In the northern hemisphere, n. of the tropical zone, catarrhal diseases prevail, while in the corresponding zone of the southern hemisphere they are unknown. Intestinal catarrh prevails, however, to a considerable extent in some parts of the intertropical regions. Nosologists are as yet unable to explain why some diseases prevail alike in widely different latitudes; for example, rheumatism in warm and dry as well as in cold and wet regions; and leprosy in Greenland, Norway, and Iceland, as well as in the tropics. In some cases, hilly regions are ravaged by fevers, while in the intervening valleys fevers seldom occur. The cultivation of the soil, sometimes essentially modifies the character of the malarial diseases. The destruction of forests often results in the introduction of diseases unknown before. Indeed, as a general rule, living vegetation tends to preserve health, while decaying vegetation is a prolific source of disease; but the modifications of this law are very little understood. Defective drainage, natural or artificial, is also a common source of disease, especially in cities and thickly settled towns. The personal habits of races and communities in respect to diet and cleanliness, exert a wide influence upon the public health. Europe, on the whole, possesses the requisite conditions of health in greater perfection than any other quarter of the world. The rates of mortality from diseases of the lungs are greater in northern than in southern latitudes. This is illustrated by the prevalence of consumption in the north-eastern portion of the United States. Fevers are more prevalent in the southern than in the northern states. Malarial fevers are especially fatal in the southern regions of the country. They are infrequent, however, where pine forests abound. Knowledge on this subject, as yet fragmentary, is slowly increasing.

DISINFECTANTS (*ante*). The subject of disinfectants is not yet perfectly understood, and there are many unsettled notions regarding it. There has lately been considerable skepticism in regard to the disinfecting powers of chlorine and carbolic acid, and with apparently good reason. Doubtless too much reliance has been placed upon them, or upon an inefficient mode of using them. The mode of action of chloride of lime, or the chlorine or chlorine compounds liberated therefrom, is probably like that in bleaching. The disease-breeding organism is broken up, and consequently its propagating power destroyed, just as coloring matter is broken up. This explanation does not take into consideration, of course, the theory of bleaching which supposed the

abstraction of hydrogen by the chlorine compound and the liberation of oxygen in the condition of ozone. The important fact to bear in mind is that the disinfectant destroys the disease germs. Now, to act in this way, it is necessary to have at least one molecule of the disinfectant in the presence of one molecule of the disease-producing organism, and probably it requires several, perhaps a hundred to one. The question then arises how many molecules of matter or how many organic compound particles are there in a given number of disease germs. No positive answer can be given. It is a mere matter, not of guess-work, but of estimation, and involves the question as to how many molecules of the disinfecting material are required to produce the death or disorganization of the disease germs. After a number of experiments, the question can be, and has been, practically decided. It is found that when an apartment is thoroughly fumigated with chlorine, or the compounds liberated by chloride of lime, that disease germs are destroyed. If, however, chloride of lime has simply been strewed about the premises, even in considerable quantity, it is found often that the place has not been thoroughly disinfected. If carbolic acid is used in too weak a solution it may not sufficiently arrest or destroy the vitality of the growing disease germs. To depend upon the fumes of carbolic acid would be a practical fallacy. The substance must be directly applied, as a rule, to have a full sanitary effect. Perhaps chlorine may act by simply killing the germs. Carbolic acid probably does, and some other substances of less power may act upon some disease germs sufficiently, when they are not present in too great quantity, to prevent development of disease. Heat and cold, when intense enough, are perfect disinfectants. The continued application of dry air heated to 150° or 200° will generally destroy disease germs. It doubtlessly desiccates them, and they die. Moist air must be heated to the boiling point to produce the same effect. A sufficient degree of cold will also effect the purpose; how great, cannot be stated for every instance. We know that diphtheria and scarlet fever, particularly the latter disease, often flourish in severe cold weather. The application of cold, except in a limited and partial manner, is impracticable. The mode of disinfecting any given locality must depend upon circumstances, and often requires much judgment. See CARBOLIC ACID, *ante*.

DISSOCIATION, or DISASSOCIATION, a word belonging to the nomenclature of chemistry, first adopted by Henry St. Clair Deville to express the influence of heat in the decomposition of compound bodies. In a paper presented to the French institute, 1857, he says that "by selecting a proper compound and heating it sufficiently, the distance between the molecules can be increased to such extent that they will separate into their elementary conditions." He holds that water may be thus dissociated into its constituent elements at the temperature of melted silver. Deville placed a tube of porous porcelain within a tube of glass, and provided each with a separate outlet. He passed hydrogen through the inner tube, and carbonic acid through the annular space; both the gases passed through the pores of the septum, and a combustible gas issued from the carbonic acid tube. Thus far the experiment was not new. He now placed the tubes in a furnace heated to between 1000° and 1300° C., and substituted steam for the hydrogen of the inner tube. Part of the steam was decomposed, the hydrogen passing through the porous matter to the outer tube, and a corresponding portion of carbonic acid entering the inner tube by the same route. Some hydrogen was lost by combining with oxygen of the carbonic acid, $\text{CO}_2 + \text{H}_2$ yielding $\text{CO} + \text{H}_2\text{O}$. From the inner tube came steam, carbonic acid, and oxygen, from which the oxygen was easily isolated; from the outer tube came steam, carbonic acid, carbonic oxide, and hydrogen, from which the hydrogen was also isolated. If the carbonic acid of the process were derived from the furnace which furnished the heat, and the steam were generated by the same heat, there results from the heating of water in this apparatus a certain quantity of separated oxygen and hydrogen, which might be used for the production of light and heat. By a modification of this process, sulphurous acid was separated, at 1200° C., into sulphur and anhydrous sulphuric acid; hydrochloric acid into hydrogen and chlorine; carbonic oxide into carbon and carbonic acid; and carbonic acid into carbonic oxide and oxygen. The economic value of this discovery is yet a problem. Lamy has applied it to the preparation of a pyrometer for showing high temperatures.

DISTRIBUTION OF LIFE, ANIMAL AND VEGETABLE. In the light of modern discoveries, the interdependence of every part of nature is clearly revealed, and the life of the world is seen to be one symmetrical organism, the different parts of which are distributed in time and in space by the operation of laws as yet but imperfectly understood. Animals and plants, though sustaining very close relations to each other, form two distinct branches of study, whose phenomena require to be carefully discriminated. Animals are divided into terrestrial and aquatic, the first class being the most important and best understood. Their distribution is considered in two aspects—the climatical and the geographical—which present distinct and sometimes conflicting classes of facts. Of the two, the geographical conditions are the most important. The range of animals is determined in some degree by the altitude or depression of the land-surface on which they dwell. A very important element to be considered, in determining the causes of the distribution of animals, is found in their different powers of dispersal or migration, some having no means of passing over seas, or lofty mountains, or arid deserts, while others,

especially the insect tribes, are not thus limited. But migrating animals can not always maintain themselves in a new region, the organisms in previous possession of the soil being too strong for them. The power of adaptation is generally inferior to the power of dispersion. The nature of the vegetation determines the range of some animals. Deserts, marshes, and forests have each their peculiar inhabitants, which do not often stray beyond their limits. Tropical forests especially supply the wants of a great number of peculiar form of life. Mountains of great height and in unbroken ranges form a barrier to the migration of many groups, but their geological age is limited, while oceans, owing to their great antiquity, have separated the faunas of different continents for countless ages. The zoological regions of the earth, according to the best authority, are six in number, each one having marked and distinct peculiarities. The last of these divisions is the Nearectic, which comprises all temperate North America, and is subdivided into the Californian, the Rocky mountain, the Alleghany, and the Canadian regions. The peculiar fauna of the Nearectic region is best represented in the United States, where many peculiar genera of mammalia, birds, reptiles, and insects are found. The distribution of the higher animals during the post-tertiary and tertiary periods is a subject of very deep interest. It is found that, during the post-tertiary period, the reindeer and the antelope inhabited France; elephants and rhinoceroses roamed all over Europe; in North America there were lions, horses, camels, bison, elephants, and mastodons. This period was characterized by great movements or migrations of the higher animals, and by the extinction of many huge creatures belonging to almost every order of mammalia, and several orders of birds. The tertiary fauna of North America, compared with that of Europe, exhibits proof of a former communication between the two northern continents. From the knowledge now possessed of the extinct fauna of most of the great continents, scientists can approximately determine the original birthplace of some now widely distributed groups. The distribution of the marine animals also presents many interesting phenomena, but they cannot be noticed here. The geological record on which depends our knowledge of the distribution of animals in respect to time, though it reveals much important truth, is yet very imperfect. The evidence, so far as it goes, tends, it is thought, to confirm the doctrine of evolution.

The distribution of vegetable life is involved in much obscurity. For a long time the investigation of the subject was pursued under great disadvantages, and with very unsatisfactory results. The writings of Darwin, Hooker, Gray, and Bentham, however, have thrown much light on the subject. Bentham recognizes three ancient floras—the northern, the tropical, and the southern. The northern is divided into that of the old and new world by the severance of North America from Northern Asia, and by the barriers of the Rocky mountains. The divergences in the flora of these two regions originated in distance, but have been greatly increased by isolation. Lesquereux believes that the origin of the present American flora is American. There is a strong analogy, however, between it and the miocene flora of Central Europe, and the American element in the latter is supposed to be derivative, confirming the observation of Gray that plants tend to migrate from east to west, rather than from west to east. The boundaries of the northern flora, under the influence of climatic variations, have also undergone longitudinal changes. The northern flora, by the combined influence of physical and genetic causes, has undergone a specialization into three distinct groups—the Arctic-Alpine, the temperate, and the Mediterranean-Caucasian. The southern flora is still more complex in its relations, and is described in five types—the Antarctic-alpine, the Australian, the Andine, the Mexico-Californian, and the South African; the latter, though limited in extent, being the richest of all. The tropical flora has hardly as yet been investigated. It presents three subdivisions—the Indo-Malayan, the American, and African; the latter, especially, being very imperfectly known. This whole branch of science is, in many respects, an unexplored field and a very inviting one to naturalists. See GEOGRAPHICAL DISTRIBUTION OF ANIMALS, AND GEOGRAPHICAL DISTRIBUTION OF PLANTS, *ante*.

DISTRICT ATTORNEY OF THE UNITED STATES, a member of the bar appointed to try civil and criminal suits for the government in the circuit and district courts of the United States, and required by law to report his doings to the attorney-general in Washington. He has a merely nominal salary, but receives fees, often large, prescribed by act of congress. The office is one of responsibility and honor.

DISTRICT, CONGRESSIONAL, that portion of the territory of a state the voters in which are by law entitled to choose once in two years a representative to the congress of the United States. The number of such districts varies from time to time, being fixed by congress immediately after each decennial census. (See APPORTIONMENT BILLS.) The boundaries of the district in each state are determined by the legislature thereof. The ratio of representation (number of inhabitants required for a district) under the census of 1870 is 131,425; the number of districts is 293. The ratio is raised after each census, on account of increase of population, as otherwise congress would be inconveniently large. The time may come when a member of congress will represent a million of people. The constitution declares that each state shall have at least one representative, even if its whole population should at any time come short of the prescribed ratio. Under this rule the state of Delaware with a popu

lation of only 125,015 has one representative in the lower house of congress, while in the senate its representation is equal to that of any other state. It is probable that the population of some other small states will ere long fall below the decennial ratio of representation.

DISTRICT OF COLUMBIA (COLUMBIA, *ante*), a small territory between Maryland and Virginia selected in 1800 as the site for the national capital of the United States. The selection of a place for the seat of government provoked the first discussion of a sectional nature after the adoption of the federal constitution. The government was organized at New York, Mar. 4, 1789, and congress met in that city until 1791. In 1790, after a long discussion, a bill was passed providing that the seat of government should be changed to Philadelphia, where it should remain from Dec., 1790, to Dec., 1800, at which time it should be upon "a district of territory not exceeding 10 sq.m., on the river Potomac, between the mouth of the eastern branch and Conogochegue." The land was on both sides of the Potomac, and was ceded by the owning states with the condition that congress, or the United States, should have exclusive control forever. Maryland ceded 64 sq.m., or the whole of Washington co.; and Virginia ceded 36 sq.m., which was Alexandria co.; but in 1846, the Virginia portion was returned to that state, as no part of the government establishment had been erected s. of the river. It is said that the site of Washington, or near there, was a favorite meeting-place for Indians. Among the earliest white settlers was an Englishman named Pope, who bought land and named the stream flowing through it the Tiber, and to the eminence on which the United States capitol now stands, he gave the name of Capitoline hill, calling his whole plantation Rome, and signing himself "Pope of Rome." About 60 years before the revolution, one of the ancestors of Daniel Boone owned the land now occupied by the city of Georgetown, on which he laid out a town of the same name. The first movement towards selecting a permanent seat of government was in 1783, when, through acts of mob violence, congress was forced to adjourn from Philadelphia to Princeton, New Jersey. At that time Elbridge Gerry of Massachusetts offered a resolution (adopted, but afterwards repealed) providing for the selection of a site on the Delaware, and one near the falls of the Potomac, his idea being to have a northern and southern capital. The authority to select a site was given, finally, in the federal constitution. The government title to the territory was perfected, and buildings suitable for the accommodation of congress and the executive departments were ready at the prescribed time, and on the first Monday of Dec., 1800, the capital was fixed in the federal city called Washington. For many years afterwards, Washington was but the skeleton of a town, and from its ambitious proportions was nicknamed "the city of magnificent distances," while even the poets flouted its pretension with the line, "And what was Goose creek once is Tiber now." In 1814, the British took possession of the territory, and burned the capitol and other public buildings. Soon after that war, the District of Columbia began to improve in population and industries. When the rebellion began, strong fortifications were erected for the defense of Washington, which was several times menaced or in danger, but never actually attacked.

The district of Columbia was governed directly by congress until 1871, when the people of the district were given the privileges of self-government as a regular territory; but thus far they have sent no delegate to congress. As in other territories, the voters have no voice in presidential elections; and it is a singular fact that until the act of 1871 many of the people residing in this district in sight of the capitol were not political citizens of any state nor of the nation. The territorial act creates a governor and secretary, appointed by the president and United States senate; a council of 11, and a house of delegates of 22 members, with annual sessions limited to 60 days. Pay of governor, \$3,000 a year; legislators, \$4 per day. Suffrage is the same as in nearly all the states.

At the commencement of 1879, there were in the district 6 daily and 14 weekly newspapers, and 5 monthly and 1 quarterly publication—26 in all. Children between 6 and 17 are within school age, and in 1878, there were 38,850 in the district; 24,000 enrolled; average attendance, 16,318; school days, 195; teachers, 40; income for education, \$385,000; expenses, \$270,000; school property valued at \$1,169,614. The colleges are: Columbia university (Bapt.); Gonzaga college (R. C.); National deaf-mute college (non-sect.); and Howard university (non-sect., though under Cong. and Pres. patronage); all at Washington; and Georgetown (R. C.) college. In all these there were 41 instructors and 268 pupils. Both sexes are admitted to Howard university, and colored students are admitted to the theological department. The Baptists have also a school (Wayland seminary) in Washington; there are medical departments in nearly all the colleges, and also a National college of pharmacy. All except the Roman Catholic institutions have law departments, in which there were 12 instructors and 342 students; in medicine, 42 instructors and 183 students. (For latest statistics, see Appendix).

DISTRICT COURTS OF THE UNITED STATES, tribunals subordinate to the circuit courts. Each of the nine judicial circuits (corresponding to the number of justices of the supreme court) is divided into a larger or smaller number of districts. In some instances a district embraces the whole territory of a state; in others, states are divided into two or more districts. In one instance a single judge serves three, in

others, two districts. With these exceptions, there is one judge for each district. When a circuit court is held within the limits of a judicial district, the district judge sits with the judge of the supreme court appointed for that circuit.

DISTRICT, SENATORIAL. A territory, the electors of which are entitled to choose a representative in the upper branch of a state legislature. The U. S. senators are chosen by the state legislatures, two for each state, without reference to population; hence the term district is in no way applicable to them.

DITTEAH, or DUTTEAH, a t. in Hindustan, 125 m. s.e. of Agra; pop. about 50,000. It is a walled town, and the capital of a rajahship.

DITTON, HUMPHREY, 1675-1715; an eminent English mathematician, for some years a dissenting clergyman. The influence of sir Isaac Newton secured for him a professorship in the new mathematical school at Christ's hospital, where he remained through life. He and Whiston published a new method for determining longitude at sea, but it was rejected by the board of admiralty. Ditton was the author of several mathematical works.

DIVISION, MILITARY (DISTRICTS, MILITARY, *ante*). For convenience and to fix responsibility, the United States is divided into military divisions, viz.: 1. Division of the Missouri, comprehending the departments of Missouri, Dakota, Texas, and the Platte; head-quarters Chicago. 2. Division of the Pacific, including the departments of California, Columbia, and Arizona; head-quarters San Francisco. 3. Division of the Atlantic, including the departments of the east, the south, and West Point; head-quarters New York.

DIVORCE (*ante*) in this country depends upon the statutes of the several states, and there is great variety among them. In South Carolina a divorce is not allowed for any cause; in New York for adultery only; but in most of the states it may be granted for several causes, as adultery, cruelty, willful desertion for a certain period, habitual drunkenness, etc. In some states the matter is left wholly or in part to the discretion of the court. The principal defenses in suits for divorce are the same as in the English courts. The consequences of divorce are such as flow from the sentence by operation of law, or flow from either the sentence or the proceeding by reason of their being directly ordered by the court and entered of record. In regard to the former, they are chiefly such as result immediately and necessarily from the definition and nature of a divorce. Being a dissolution of the marriage relation, the parties no longer have any of the rights nor are they subject to any of the duties pertaining to that relation. They are thenceforth single persons to all intents and purposes. It is true that the statutes of some of the states contain provisions disabling the guilty party from marrying again; but those are in the nature of penal regulations, collateral to the divorce, and which leave the latter in full force. In regard to the rights of property as between husband and wife, a sentence of divorce leaves them as it finds them. Consequently all transfers of property which were actually executed, either in law or in fact continue undisturbed; for example, the personal estate of the wife reduced to possession by the husband remains his after the divorce the same as before. But it puts an end to all rights depending upon the marriage, and not actually vested; as, dower in the wife, all rights of the husband in the real estate of the wife, and his right to reduce to possession her right to collect debts or damages for breach of contract. In New York, however, with respect to dower it has been settled that immediately upon marriage being solemnized the wife's right to dower becomes perfect, provided only that she survives her husband. Alimony during proceedings for divorce is a frequent question, usually in the discretion of the court. The custody of children is another and more important question. The general principle is to consult the welfare of the child rather than any supposed rights of either parent; but in considering the rights of parents the innocent parent is preferred before the guilty. In the absence of a controlling necessity, or very strong propriety arising from the circumstances of the case, the father's claim has preference.

DIX, DOROTHEA LYNDE, b. Mass., 1794. She established a school for girls in Boston, and took much interest in the unfortunate and criminal classes. In 1834, she went to Europe to study methods of the treatment of paupers, criminals, and insane persons. After a great deal of exertion she induced congress to pass a bill granting ten millions of acres of land to endow hospitals for the indigent and insane, but the measure was vetoed by president Pierce. During the rebellion she was superintendent of hospital nurses for the union army. Among her publications are *Garland of Flora*; *Private Hours*; *Alice and Ruth*; *Conversations about Common Things*; and *Prisons and Prison Discipline*.

DIX, JOHN ADAMS, LL.D., 1798-1879; b. N. H.; a politician and soldier. In the war of 1812, he served as an ensign on the Canada frontier. In 1828, he began the practice of law in Cooperstown, N. Y., and became one of the leaders of the democratic party. In 1830, he was adjutant-gen. of the state, and in 1833, secretary of state and superintendent of common schools. He was chosen member of the assembly in 1842, and in 1845, appointed to fill a vacancy in the U. S. senate. In 1848, when the democratic party divided on the question of the extension of slavery, he went with the "free soil" wing and was their candidate for governor, but was not elected. In 1853, he was

assistant treasurer of the United States in the city of New York. In 1860, he was chosen secretary of the treasury. Secession was just beginning, and New Orleans was substantially in the hands of the confederates. Two revenue cutters there were ordered to New York by the secretary. The captain of one of them refusing to obey, secretary Dix immediately telegraphed to have him arrested and treated as a mutineer if he offered any resistance, closing the dispatch with the words: "If any man attempts to haul down the American flag, shoot him on the spot." In 1861, Dix was appointed maj.gen. of militia, and the same year maj.gen. of U. S. volunteers. In 1862, he was placed in command of the department of Maryland, and about the same time was sent to Fortress Monroe in command of the seventh army corps. He was in command in New York city at the time of the riots, July, 1863, and in 1864-65, commanded the department of the east. In the autumn of 1866, he was minister to France, and resigned, 1868. In 1872, the republican party elected him governor of New York. He retired in 1875, and passed the remainder of his life in private. Besides miscellaneous papers he was the author of *Resources of the City of New York*; *Decisions of the Superintendents of Common Schools of New York*, and *Laws relating to Common Schools*; *A Winter in Madeira*; *A Summer in Spain and France*; and two volumes of speeches.

DIX, MORGAN, S.T.D., b. New York, 1827; son of John A.; a clergyman of the Protestant Episcopal church, graduate of Columbia college and of the Protestant Episcopal general theological seminary. He was ordained in 1853, and in 1855, became assistant minister of Trinity church, New York. In 1859, he was assistant rector of the parish, and in Nov., 1862, after the death of Dr. Berrien, he succeeded as rector, where he still remains. He has published, among other works, *A Commentary on the Epistle to the Romans*; *An Exposition of the Epistles to the Galatians and Colossians*; *Lectures on the Pantheistic Idea of an Impersonal Substance Deity*; *Essay on Christian Art*; and *Lectures on the Two Estates*, that of the *Wedded in the Lord*, and that of the *Single for the Kingdom of Heaven's Sake*.

DIXIE, a popular name for the Southern states of the American union, much in use about the time of the attempted secession. It seems to have been adopted from a song of the slaves which set forth the delights of a region where they were under a good master—the region being called Dixie's Land, from a well-known kindly slave-holder of that name. The old song, or one based upon it, became widely favored as a sectional rival of *Yankee Doodle*.

DIX ISLAND, off the Maine coast, about 10 m. s.e. of Rockland; a remarkable deposit of excellent granite, from which the New York post-office, the treasury building at Washington, and many other fine public buildings have been constructed. There are probably 1500 men and one or two hundred women and children on the island. Quarrying is the only business.

DIXON, a co. in n.e. Nebraska, bordering on the Missouri river; 700 sq.m.; pop. '76, 3,263. It has a level surface and fertile soil. Agriculture is the chief business. Co. seat, Ponca.

DIXON, a city, seat of justice of Lee co., Ill., on Rock river, at the crossing of the Chicago and Northwestern and the Illinois Central railroads; 98 m. w. of Chicago; pop. 4,055. It has good water-power, and a number of manufactories.

DIXON, JAMES, D.D., 1788-1871; an English Methodist preacher of the Wesleyan conference. In 1824, he was a missionary at Gibraltar; 1828-33, a preacher in London; afterwards in Liverpool, and superintendent of the Sheffield and Manchester circuits. In 1841, he was president of the British conference, and in 1848 was sent by the Wesleyan body as delegate to the general conference in the United States. He published *Methodism in its Origin, Economy, and Present Condition*; *Notes on America*; *The Present Position and Aspects of Popery*, and *the Duty of Exposing the Errors of Papal Rome*, etc.

DIXWELL, JOHN, 1609-89; of a good family in Kent; one of the judges of Charles I. After the accession of Charles II. he was condemned to death, but fled to America, and lived undiscovered in New Haven, under the assumed name of John Davids.

DOANE, GEORGE WASHINGTON, D.D., LL.D., 1799-1859; b. N. J.; graduate of Union college in 1818; ordained 1821, and rector for three years in Trinity (Prot. Ep.) church, New York. He was assistant minister and rector of Trinity church, Boston, 1828-32, and was then chosen bishop of New Jersey. While in this office he made special efforts for higher Christian education, and opened St. Mary's Hall at Burlington, on the Delaware river, a boarding-school for girls. In 1846, he founded Burlington college. His denomination flourished greatly under his episcopate. He published a volume of poems and a volume of sermons.

DOB'RIZHOFFER, MARTIN, 1717-91; a Jesuit missionary in Paraguay, where he labored many years among the native tribes. When the order was expelled from South America, he settled in Vienna, and enjoyed the friendship of Maria Theresa. He wrote a garrulous history of his missionary work in South America.

DO'CE RIO, a river of Brazil, about 500 m. in length; rising near the city of Ouro Preto, in the province of Minas Geraes, running n. 150 m., then e. and s.e., and then n.e. through the province of Espirito Santo, then turning to the s.e. and emptying into

the Atlantic near Regencia. It is navigable in only small portions; the banks are steep, and bordered by mountains covered with deep forests.

DOCK (*ante*). Docks in the United States are of not so much importance to commerce as in England, the rise and fall of the tide being far less. There is no difficulty in lading and unlading ships at the wharves of any of the Atlantic or gulf ports, and hence little need of inclosed docks. There are, however, some very fine docks for the more convenient handling of merchandise, especially of grain, sugar, cotton, etc., and for the care of valuable goods. The Atlantic docks in Brooklyn are a specimen. For the repair of vessels, the lifting dock is most in use, and generally hydraulic power is used. The graving-dock in the government navy-yard at Brooklyn is one of the finest in the world, though built on a most difficult foundation. The floor is an arch, upside down; the mason work is granite-faced, and the facing stones weigh as much as three tons. The gates are of iron, and with apparatus for opening and closing them, weigh about 400,000 lbs. The floating caisson is of iron, and weighs over 420,000 lbs. besides ballast. There is pumping power sufficient to empty the dock in two hours. The principal measurements are: length and breadth of main chambers, at bottom, 286 by 30 ft.; at top, 307 by 98. The caisson added makes the extreme length 359 feet. This dock cost over \$2,000,000.

DOCKET. See **DOQUET**, *ante*.

DOD, ALBERT BALDWIN, D.D.; 1805-45; son of Daniel; a graduate of Princeton, and tutor in the college 1827-29, and in 1830, chosen professor of mathematics. He lectured upon political economy and architecture, and wrote for the reviews and magazines of the period.

DOD, DANIEL, 1788-1823; b. Va., educated at Rutgers college, and especially devoted to the construction of steam machinery. He began when steam navigation was in its infancy, and soon became one of the most successful engine-builders in the country. He met his death in consequence of an explosion of a boiler on a steamboat in which he was experimenting on the East river, New York.

DODDER-LAURELS, *Cassythaceæ*, parasitic plants appearing generally like dodders, but in many respects resembling laurels. They grow only in hot regions, where they supplant the dodders. Only a single species is known in the United States.

DODDRIDGE, a co. in n.w. West Virginia, crossed by a division of the Baltimore and Ohio railroad; 300 sq.m.; pop. '70, 7,076—35 colored. The surface is hilly; chief business, agriculture. Co. seat, West Union.

DODECATH'EON, plants of the order *primulacæ*. A species in the United States called American cowslip, shooting-star, and pride of Ohio, is a beautiful plant.

DODGE, a co. in central Georgia, formed after 1870, on the two Ocmulgee rivers, and intersected by the Macon and Brunswick railroad; about 500 sq. miles. Co. seat, Eastman.

DODGE, a co. in s.e. Minnesota, crossed by the Winona and St. Peter railroad, and drained by the tributaries of the Zumbro river; 432 sq.m.; pop. '70, 8,598. It is mostly a level and fertile prairie. Agriculture is the chief business. Co. seat, Mantorville.

DODGE, a co. in central Nebraska, n. of the Platte and intersected by the Elkhorn, crossed in the s. part by the Union Pacific railroad; 600 sq.m.; pop. '76, 8,465. The productions are corn, wheat, oats, etc. Co. seat, Tremont.

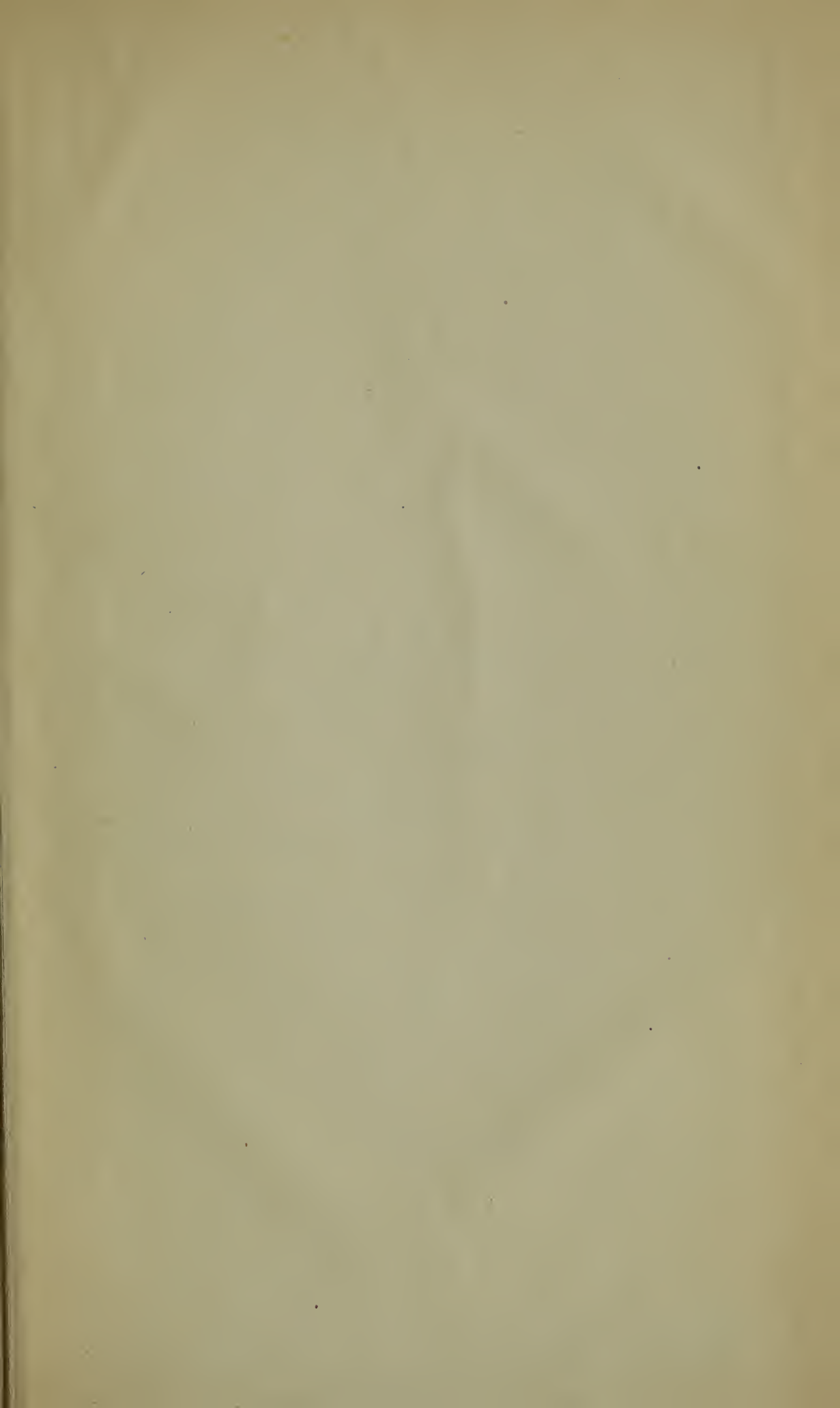
DODGE, a co. in s.e. Wisconsin, on Rock river, crossed by two railroads; 936 sq.m.; pop. '75, 48,394. The surface is prairie with oak openings, and there are forests of ash, elm, maple, etc. The soil is very fertile, producing corn, oats, etc. Co. seat, Juneau.

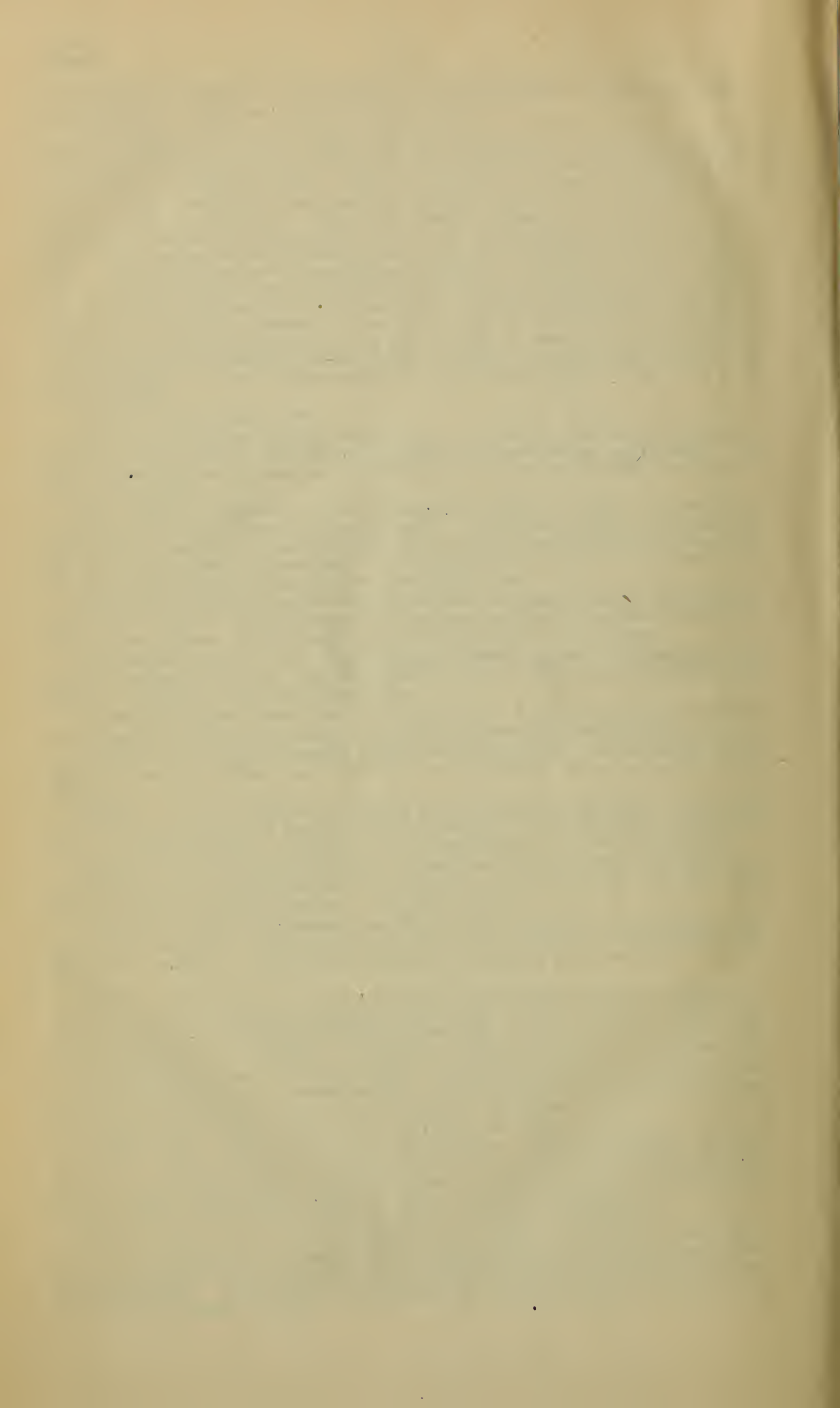
DODGE, EBENEZER, D.D., LL.D.; b. Mass., 1819; a Baptist minister, a graduate of Brown university and Newton theological institution. He was professor in the theological department of Madison university from 1853 to 1868, and in the latter year chosen president of the institution. *Evidences of Christianity* is one of his publications.

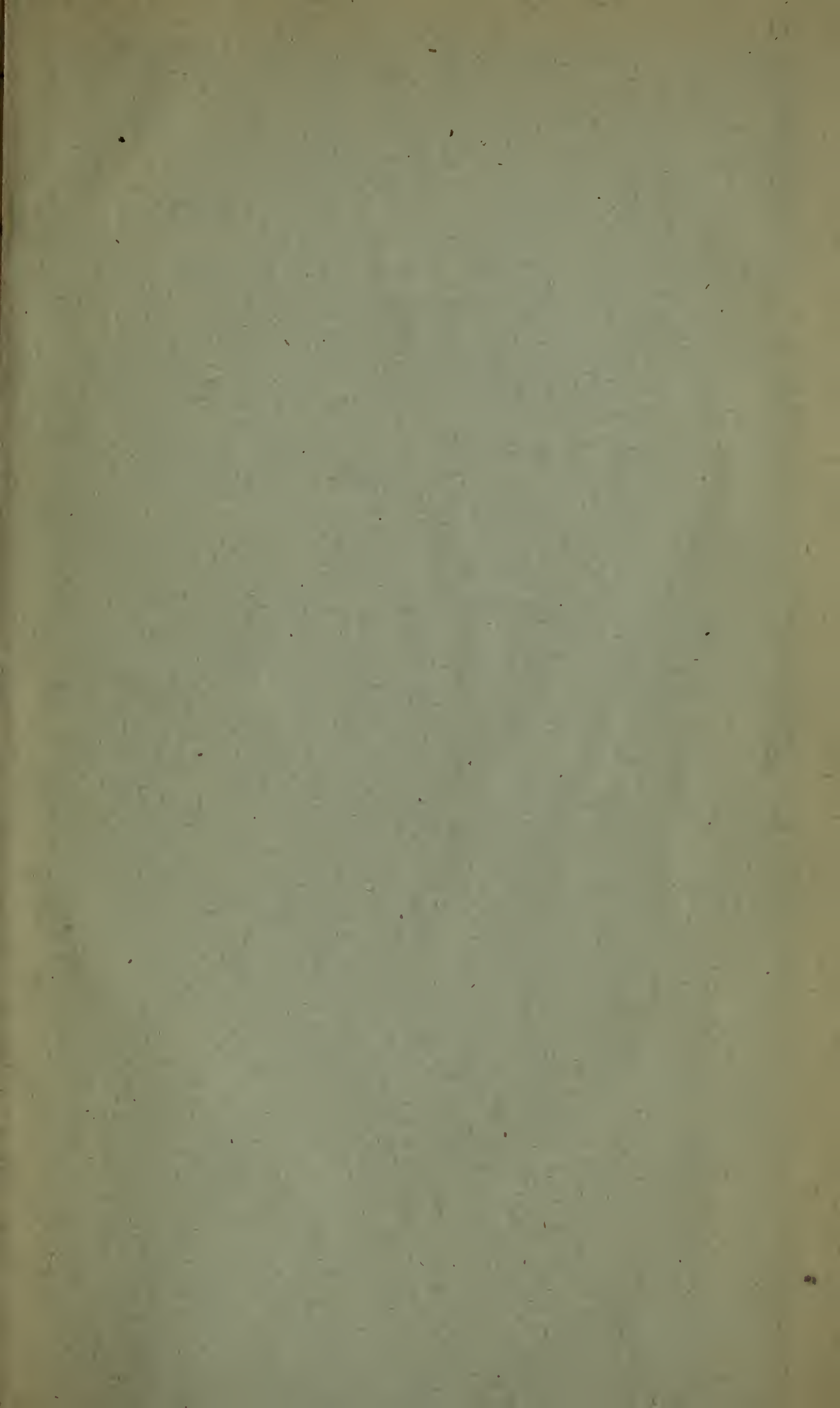
DODGE, GRENVILLE M.; b. Mass., 1821; an officer in the war of the rebellion, who became maj.gen. of union volunteers in 1864. In the same year he was placed in command of the department of Missouri, succeeding gen. Rosecrans.

DODGE, MARY ABIGAIL (known in literature as "GAIL HAMILTON"), b. Mass. about 1830; a teacher for a time, and now an authoress. *Country Living and Country Thinking*; *Woman's Wrongs, a Counter-Irritant*; *The Battle of the Books*; *Nursery Noonings*; and *Woman's Worth and Worthlessness*, are among her works, all marked by an incisive and brilliant style. She has written also for magazines, and a series of vigorous letters on civil service reform printed in the *New York Tribune*.

DODGE, WILLIAM E., b. Conn., 1804; for many years a merchant of New York, where he became known as president of the American Bible society, and in connection with the Young Men's Christian association, and as active in many philanthropic and benevolent efforts. He was one of the members of the peace convention of 1861, and a member of congress in 1865-67.









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